PROJECT MANAGEMENT MANUAL

INFORMATION SCIENCES DIVISION

International Development Research Centre
Centre de recherches pour le développement international

PROJECT MANAGEMENT MANUAL

PREPARED BY

KIERAN P. BROADBENT

Table of Contents

INTRODUCTION

SECTION I - THE PROJECT MANAGEMENT PROCESS

The Information Sciences Division of IDRC and its Programs
- Science and Technology Information
- Agriculture
- Industry, Technology and Shelter
- Natural Resources & Environmental Information
- Science and Technology Information Systems
- STI Program Directions and Thrusts

Socio-Economic Information Program
- Development Economics
- Health and Social Issues
- Infrastructure Development

Information Tools and Methods
- Telematics
- Informatics
- Geomatrics

The Project and its Relationship with IDRC

SECTION II - THE PROJECT MANAGER

An Introduction to Project Management
- What is Project Management?
- A Four Phase Problem Solving Process
- What is Management?

The Effective Manager
- The Project Culture
- The Culture/Performance Link
- Characteristics of the Effective Project Team

The Leader/Manager
- Leadership Style
- Development Level
- A Development Theory

The Project Manager and the Organization

Time Management
- The Time Management Survey
- How Effective Managers Really Spend Their Time
- The ABC's of Time Management
- The Hidden Pains of Doing What the Experts Say
- Back to the ABC's
- Schedule Blocking

Self Management Skills for Managers
The ABC's of Self Management
Rational Beliefs for Effective Managers: The Cornerstones of Excellence
Alternative Self-Talk

ROI - A Goal Setting System
Mission Development Worksheets
Responsibilities
Objectives
Indicators
The Benefits of the ROI System
The ROI Interview

SECTION III - PROJECT PLANNING

Related Management Issues
Funding
Project Design
Long Term Prospects

Developing Project Action Plans
Advanced Project Planning Methods
The Critical Path
Software for Project Management
Using Gantt Charts to Develop a Project Plan
Advantages of the 3D Gantt Chart for Project Management and Control

Planning the Management of Equipment and Capital Resources
Introduction
Selection and Purchase
Preventive Maintenance
Conclusion

SECTION IV - PROJECT SUSTAINABILITY

Networking and Twinning among Information Profit Managers

Delivery of Project Outputs
The Concept of Information Resources
Information Resources Building
Design of Project Outputs

Promotion of Project Outputs

SECTION V - PROJECT EVALUATION

Project Evaluation
Evaluation Worksheet
What is a Good Evaluation?
Steps in Carrying Out an Evaluation
The IDRC Evaluation System

Project Records

SECTION VI - FINANCIAL ADMINISTRATION

The IDRC Grant Document
- Introduction
- What is an MGC and Why is it Necessary?
- Specific Provisions of the MGC
- Specific Clauses

Principles of Financial Administration
- A Case Study
- Step 1 - Creating the Financial Model of the Organization
- Step 2 - Relating Mission, Objectives and Strategies to Acitivity Level
- Step 3 - Converting Activity Level to an Agency Overhead Budget
- Step 4 - Integrating the Agency Overhead Budget and the Program Budget
- Step 5 - Setting Price Levels or Revenue Formulae
- Step 6 - Completing the Budget

IDRC Budget Development and Financial Administration
- Budgeting
- Project Finance and Administration
- Financial Guidelines for IDRC Project
- Project Reports
- The Standard Project Accounting Kit
- Special Transactions

SECTION VII - TRAINING

The Centre Library

Training in Information Sciences Projects
- Types of Training Available
- Choice of Participants
- Role of Project Managers in Staff Training
- Conclusion

Training in Project Management
- IDRC Training Policies and Mechanisms
- Training Objectives
- Support Mechnisms

FOREWORD

Science and technology is essential to the achievement of socio-economic development objectives. Fundamental to the development process is the role of information for the transferring of scientific and technical knowledge essential to the attainment of social and economic improvement.

In recognition of this, the Information Sciences Division of the International Development Research Centre (IDRC), assists developing countries to develop and run appropriate information systems through the funding of projects negotiated with recipient institutions. To date, the Division has supported more than 400 such projects with total grants exceeding 80 million dollars.

The grants, for the most part, go towards developing institutional, regional and national capacities to manage information in order to meet the needs of the many levels of users in the developing country regions.

One of the issues of importance to the Division has been the development of human resources, in particular within projects, in order to ensure the permanent strengthening of indigenous capabilities to carry out activities after the project has ended. To date however, the issue of project management has received little attention from the point of view of training because implicit in the negotiating and funding of the project has been the assumption that the project will be properly managed.

Although IDRC is distinguished in its overall approach to monitoring and advising the projects it supports, it has been recognized that the role of the project leader/manager in bringing a project activity to successful completion, and ultimately long-term sustainability is crucial to the process. It is felt, that more formal approaches to project management should be considered.

In designing this manual, a number of issues identified by project leader/managers have to be taken into consideration. These issues include: how to set specific and measurable goals; how to build an effective project team; the ability to make oral and written reports; to be acquainted with the overall mission of one's own organization. A major goal is to link these issues all together in a realistic package that when completed, would represent an amalgam of subjects covering all areas related to project management from the point of view of both IDRC and project managers.

A Division wide manual created from the material would ensure its effectiveness as a tool for all projects the Division supports and perhaps at the same time could be used as a model for the Centre as a whole.

M.B. Stone

INTRODUCTION

The purpose of this manual is to provide a practical basis to ensure that management techniques and skills become an integral part of the way projects supported by the Information Sciences Division are administered in future.

The draft document is a conversion of the original materials used in the STI management course held at ILCA, Addis Ababa, Ethiopia 21-25 November 1988. It also contains some revisions and new additions. The manual is designed so it can be changed and supplemented from time to time as needs change. It will provide project managers with a day-to-day management tool and reference guide. It will also act as a counselling tool for programme officers. In pursuing its practical objectives, the manual is less concerned with theoretical niceties than with operationally valid ways of providing answers to day-to-day management issues and administrative decisions.

It should be emphasized at the outset that although in detail the overall management approach can be daunting in some situations, the fundamental principles are simple and longstanding. Any attempt to try and apply the manual in its entirety to a given situation will almost certainly be doomed to failure. What is important to recognize is to apply the approach with care, tact and imagination to the local situation focusing attention on the issues most likely to materially benefit from counselling. In particular, it is important to pay attention to the management issues normally considered as necessary to project execution: financial reporting, project planning, technical reporting and other relationships with the donor which are part of existing IDRC procedures.

Project managers differ in their understanding of the problems that act as a constraint on their progress and it is for this purpose that this manual is designed to be flexible enough to accommodate to these differences. It is intended to build a living-file of responses to issues as they arise and as they are identified in the projects during the normal course of correspondence and monitoring visits. The Division is committed to effective project management and successful completion of projects. It is, therefore, hoped this manual will be a useful tool to help in meeting this commitment.

SECTION I

The Project Management Process

The Information Sciences Division and its Programs

One of the ways in which IDRC is unique among development-aid agencies is that it has maintained a major program in the Information Sciences. This program provides grants for the establishment of better information systems in developing countries. The mission underlying the program is *"to promote the social and economic advancement of developing regions by providing researchers, policy-makers, and practitioners, in developing countries, access to the scientific, technical and other information they require for application to the problems of development"*. The basic principle is to help countries help themselves. The general strategy is to support improvements in the flow of information from source to use. The basic tactics are to provide the means. Management is, therefore, a basic element in the development of information activities.

The projects which the Information Sciences Division supports attempt to:

- Improve systems, services, and tools for managing and using information relevant to development research and change.
- Build indigenous capacity within developing countries for the effective management and application of information for development.
- Foster cooperation and coordination in development research through information sharing.

Science and Technology Information (STI) Program

The STI program of the Information Sciences Division is implemented through four subprograms:

- Agriculture.
- Industry, Technology and Shelter.
- Natural Resources and Environmental Information.
- Science and Technology Information Systems.

Participants at this meeting represent information projects IDRC is supporting in these areas.

Agriculture

Access to food is one of the most urgent problems facing people in developing countries. The Agriculture Information Program supports information activities in the agriculture sector aimed at the production of more and better food and at making it available to developing country peoples.

Emphasis is on the development of information systems which assist in providing access to information about crop and animal production systems, specific crops or commodities and related issues. Because the area of agricultural information is well covered globally, the focus of the program is to improve the capacity of developing countries to participate in international and regional information systems. The program also facilitates the movement toward more indigenous control and production of information and the development and management of national and regional information systems.

In addition to crop and animal production, subjects covered under this program range from issues dealing with the policy and organisation of agricultural research such as farm management, extension and agricultural credit to marketing which includes handling, storage and transport of agricultural goods.

The program places special importance on projects that promote the network concept of information resource sharing at the national and regional levels as well as the development of local grassroots information systems.

Industry, Technology and Shelter

Industry, Technology and Shelter information program consists of three main components: Industrial and Technological information, Energy information and Shelter information. The Industrial and Technological information sub-program aims at developing industrial information services that will assist small and medium sized industries (SMIs). It covers the wide range of information needs of small industries including: technological and technical information about patents, standards, equipment, quality control, management, and marketing. Projects may focus on all industrial sectors or be limited to a specific sector and targetted user groups. The program puts an emphasis on funding activities that increase access to information through active dissemination methods such as extension or consultancy services.

The Energy Information sub-program focusses on new and renewable energy sources and includes both bibliographic and numerical data.

The Shelter information sub-program is concerned with information about local building materials, low cost housing design as well as city and village infrastructure such as transportation information systems.

Natural Resources and Environmental Information

The Natural Resources and Environmental Information program has been developed on the premise that sustainable development cannot be achieved if developing countries cannot properly manage their natural resources and environment in support of their population. This program responds to expressed demands from the developing countries to develop and strengthen information systems and services in support of rational management of their natural resources and environment.

The focus of this program is the utilization of environmental information including baseline data related to food supply, energy sources and other resources essential for human well- being. This program supports information projects related to climate, fisheries and aquaculture, forestry and agroforestry, geology, water resources management (including irrigation and drainage), land use, soils and natural resources and environmental management.

Recognizing that management and conservation of natural resources and environment require local specific data, and that the usefulness of global data are often limited for national planning, this program emphasizes capacity building at national and subnational levels. However, linkages and cooperation with international and regional systems are encouraged when appropriate.

Science and Technology Information Systems

The objectives of this program are to assist developing countries in improving and managing their S & T research and development capability. In particular, this program supports projects which:

- Improve national and regional capabilities for managing multisectoral science and technology information systems and services.
- Improve capacity to manage information systems and services to facilitate national S & T policy formulation and implementation.

STI Program Directions and Thrusts

IDRC is committed to spreading knowledge. The STI programs of the Information Sciences Division echoes this commitment. Science is knowledge which in turn is applied as technology. Technology is transferred and its effects are evaluated. It should be enhanced through the feedback loop. Our projects stress the concepts of information sharing and obtaining feedback from the user to assist rational and appropriate decision making. Projects also promote indigenous capacity building in the development of information systems to:

- Identify and rank information needs.
- Locate and select information sources.
- Manipulate and process acquired information.
- Retrieve, repackage and disseminate information to a clearly defined clientele.

Depending on the topic, proposals are examined by program staff in the light of several criteria:

- Is it a national priority and a program priority for IDRC and specifically the STI sub-program?
- Does it make maximum use of local resources?
- Are there good prospects for tangible benefits to the rural poor either directly or indirectly?
- Are there similar activities to which the proposal can be linked?
- Are costs reasonable and are funds available?
- What are the prospects for long term viability?

The STI sub-program, has as a major priority, support for national information systems and networks, either in specialized fields such as post-harvest technology or in the broad field such as agriculture, industry, etc. Support to national systems stresses obvious global and regional links where efficient exchange of information is important. Support for specialized information activities also remains at the heart of the program and the development of mission-oriented services is encouraged, which are capable of providing poorer countries with greater access to information according to their defined needs. A good example of this has been the support given to the International Banana and Plantain Network (INIBAP) which works through a decentralized research system of four regional subnetworks and, where, as a result, information exchange is a high priority.

Regional information also commands our attention. This can operate both complementary to and supplementary to national systems. These regional systems should be able to store national data and respond to national inquiries particularly where the information has limited capacity at the national level ie. biogeographical information, climatic data, etc.

The Division expects to become increasingly involved in environmental and conservation issues as a result of increased global awareness of the problems of land, water and climate which are the basis of all human development. These broad areas can be further prioritized according to both subject content ie. soils, information or environmental relationship (desertification, drought etc.).

A further priority is industry, technology and development. Involved in this area are:

- Initiating income generation programs.

- Providing developing countries with opportunities to introduce innovation.
- Adapting technology.
- Fostering technology transfer of both modern and applied technologies.

IDRC does not support pure technical assistance. The interest lies in development of research capacity. Nor does it support attendance at meetings, seminars, workshops and conferences unless it is related to a particular project. IDRC does not support profit organizations specifically, projects that seek profits as a major objective.

Individual research cannot be supported nor academic training unrelated to the project objectives.

Recognizing that priorities are constantly changing, IDRC is responsive to project proposals that aim to use knowledge and apply techniques that are in the best interests of developing countries.

Projects supported operate various types of information services. Their methods range from manual through semi-automatic to fully computerized services. They may be concerned with bibliographic control of a body of literature or factual data. The tools used are also varied. Use of the latest technologies is encouraged to enable developing countries to fully participate in the information age.

Capacity building at the national level receives our special attention. Experience indicates that global and regional systems do not achieve their full potential unless national participants provide the input required to take full advantage of the output. This can only be done through effective management; this explains why management is being emphasized in STI programs.

RELATIONSHIP BETWEEN STI PROGRAM ACTIVITIES AND THE MISSION OF IDRC

IDRC Mission

To contribute to development through research and research supporting activities and to assist in promoting the indigenously social and economic advancement of the developing regions of the world, with particular focus on the problems of poverty.

IDRC Objective relating to ISD

To support research of direct relevance to and demonstrable potential for third world development, with relative emphasis on poverty problem; and to assist developing countries to build and maintain indigenous research and research supporting capacity, mainly at the national, but also at theregional level, and mainly in terms of human resources.

ISD Mission

To promote the social and economic advancement of developing regions by providing researchers, policy-makers, and practitioners in developing countries access to the scientific, technical and other information they require for application to the problems of development.

ISD Objectives

- To build indigenous capacity within developing countries for the effective management and application of information
- To improve systems, services, and tools for managing and using information relevant to development research and change
- To foster cooperation and coordination in development research by sharing information

ISD Programs

- Socio-economic Information (SEI)
- Science and Technology Information (STI)
- Information Tools and Methods (ITM)

STI Program Mission

To facilitate and improve access to science and technology information (STI) in developing countries aimed at accelerating the development process by supporting activities that strive to establish or strenthen STI systems, services and networks as well as the human capacity required to operate them.

STI Program Objectives

To assist in the establishment of science and technology information services in developing countries that are sustainable in the long-term.

To support user needs, planning, implementation, and evaluation studies which may help developing countries to use their own and other donor funds for STI services most effectively.

To support applied research in special cases in some fields of ISD's program where the results are expected to have impact.

STI Sub-programs

Agricultural Information	Industry, Technology and Shelter	Natural Resources & Environment Information	Science & Technology Information Services
crop production (farming systems, selected commodities), animal production (esp. small ruminants), agricultural economics (esp. agricultural statistics, and data), rural development (esp. agricultural cooperation, farm management), post harvest (storage, transport, distribution), agricultural marketing (esp. local markets)	small & medium scale industry, (patents, standards, equipment, quality control management, marketing) new & renewable energy, building materials, low cost housing design, infrastructure, transportation	agroecology, biogeography, agrochemicals, management of pests & diseases, agrometrology, genetic resources, fisheries, living aquatic resources, forestry, agroforestry, land use, soils water resources, natural disasters, waste, nonliving aquatic resources, geology, global pollution & climate issues, minerals	science & technology policy and management, S&T indicators, multisectoral S&T, regional & global issues

STI Sub-programs Activities

How STI Program Priorizes Requests from Developing Countries

Relevance to overall IDRC and Information Sciences Division mission, objectives and programs:

- requests deal with defined programs: agriculture, industry, technology and natural resource issues;
- requests originate locally;
- there is institutional mandate;
- requests help build local capacity to deal with situation and contribute to long term solution; and
- requests fall within program's comparative advantage.

Impact of Assistance where:

- recipient demonstrates high level of commitment;
- partnership principle encouraged;
- minimum level of local resources committed to the project;
- donor support is critical; and
- evidence of a multiplier effect.

Persistance in Cooperation through:

- proposals considered on merit but geographical concentration in poorer, weaker countries;
- adherence to IDRC and Division policies on placing greater emphasis on African development;
- consolidation of earlier successes and building on expertise with new projects; and
- attention to equity and income generation to improve quality of life.

The Socioeconomic Information Program

The objective of the SEI program is to support developing countries in establishing effective and efficient information systems and services in the substantive areas of **Development Economics, Health and Social Issues** and **Information Infrastructure Development.** The focus is on supporting activities through which information vital to the development process can be made available as expeditiously as possible to the primary target user groups: the policy-makers, planners, administrators, practitioners, researchers, and information specialists at all levels.

Development Economics

This program, which is geared towards economics-based information systems, focuses on debt management, trade information, and labour and employment. The **priority areas** within this program are **debt management** and **trade information** with emphasis on regional thrusts in structural adjustment.

Debt Management

The debt crisis of has heightened awareness, within developing countries, of the need for an effective loan managers' decision support system. This would provide timely, accurate and ready-to-use information on external debt outstanding and on debt-service payments falling due in years ahead. IDRC's focus in this regard has been on supporting the development and implementation of a microcomputer-based debt recording and management system (DRMS) with the Technical Advisory Group of the Commonwealth Secretariat. As the Commonwealth Secretariat's mandate covers only Commonwealth countries, one of IDRC's major concerns is the implementation of mechanisms to provide DRMS and appropriate training to non-Commonwealth countries, as well as the development of training materials and the potential for computer-aided instruction in applying and using a DRMS; and the assessment of contribution a DRMS can make to the debt management process in a developing country. This subprogram will also explore other avenues to assist developing countries that wish to introduce computer-based debt management systems.

Trade Information

A good debt information system addresses only a part (however important) of the overall problem of debt; the trade information system (TIS) program addresses the other half of the debt problem. Expansion of exports and rationalization of imports are pivotal in reducing the debt burden and improving the balance

of payments of developing countries. Trade information, as a management decision support system, provides the exporting community with a marketing edge to sell the right product, at the right time, at the right price to the right customer by the judicious marketing mix of product, presentation, price, physical distribution and promotion. Increased export earnings and foreign exchange savings, resulting from better import procurement techniques, would contribute to the alleviation of the debt burden and thus facilitate structural adjustments.

Labour and Employment

Statistical information on the labour and employment conditions in a particular country are invaluable to planners and policy-makers. The experience gained, inter alia, in establishing CAPMAS' statistical databases on labour and employment in Egypt will guide the development and evaluation of future proposals under this subprogram.

Health And Social Issues

The purpose of this program is to support information activities in areas relating to the improvement of health and social conditions and the encouragement of community participation in national development. These include information systems dealing with **health, women in development, education, language and communication,** and **social justice for special groups.**

Health

In the health area, ISD has placed priority on strengthening health information infrastructures, primarily bibliographic in nature, at both regional and national levels. It has been concerned with the development of systems and services that can facilitate the use of existing knowledge to contribute to the health planning process, particularly at the national level. Efforts are being made to strengthen national and community health activities reflecting in part the coverage of the Health Sciences theme - the Living and Working Environment. Specific areas of concern within the health portfolio include tropical and infectious diseases, occupational health and safety, and toxicology. Existing national health information projects, which are currently all in their first phase, will continue to be supported through a second phase in keeping with the Centre's philosophy of persistence. Particular attention will be given to Africa.

Women in Development

In consultation with the Centre's Gender and Development unit and other Centre programs, this subprogram continues to support mechanisms for meeting the ongoing multi-sectoral information needs of women's groups. Emphasis so far has been on relatively small and focused projects in Latin America and the Middle East. The experience gained at this level will help in supporting the exploration of any regional and international linkages that may be required.

Education, Language and Communications

This subprogram deals with initiatives that attempt to improve social and community participation through appropriate forms of information dissemination to particular segments of the population whose illiteracy cuts them off from most sources of information.

Social Justice for Special Groups

This subprogram supports projects that facilitate access by citizens to legal and consumer information.

Information Infrastructure Development

The Information Infrastructure Development program focuses on the **development of human resources in the field of library and information science**, and on **strengthening of regional, national, and sub-national multi-sectoral information systems and networks**. These systems service the needs of different users - planners, researchers, administrators, development practitioners, and on an experimental basis, localized rural and urban user communities. The establishment of these services also involves the training and development of the information professionals staffing the systems.

Information Science Education

The focus of this sub-program is to build regional capabilities for continuing and higher education in the information sciences. This requires the design and implementation of modern curricula for full-length courses for professionals, and short-term specialist courses for practitioners. Projects reflect regional priorities and are closely linked with general training initiatives supported by the Fellowships and Awards Division.

Information Systems and Networks

The emphasis here is on encouraging resource sharing, and fostering linkages between appropriate systems, services and projects. The aim is to provide different users with the information and services they need without duplicating resources. The projects supported in this subprogram involve activities that initiate and strengthen information systems, coordinate existing services, promote networking and sharing of information, and repackage and consolidate information.

Information Tools and Methods (ITM)

Technological developments, especially through the tools they have engendered, have facilitated and popularized all aspects of the information cycle. These tools are a necessary response to the "information explosion" which has threatened to overwhelm potential information users at the same time as it has held forth the promise of so many answers to so many questions. In most cases, it is a tool built out of the technology, rather than the inherent technology itself, that is of interest and relevance to information workers and users.

The ITM program was established to assist developing countries to acquire, manage, adapt, develop, and test appropriate information-handling tools using a variety of technologies and methods. ITM is especially interested in activities that generalize and package experience with information-handling tools and methods so that developing countries themselves can make more informed decisions on the appropriateness of these techniques for their needs and hence make best use of scarce resources. ITM supports a range of activities dealing with information handling:

-information systems, networks, and services on specific technologies and methods;

-technology assessment, selection, evaluation, and testing;

-feasibility studies and technology demonstration;

-pilot projects and experiments;

-technology introduction and transfer;

-technology adaptation and development;

-education and training;

-documentation and exchange of experience; and

-stimulation of resource sharing.

Telematics

Data communication techniques, operating asynchronously and being relatively low cost in nature can facilitate information exchange through computer messaging, bulletin-board, and conferencing systems, such networks can utilize packet-switched networks, the regular telephone networks or even satellite or ground-based packet radio networks. To assist developing-country institutions in the use of these tools, the **Telematics** sub-program facilitates and supports developing-country institutions in the testing, experimentation, adaptation, and use of these techniques.

Informatics

Computers have long been utilized in the development process. However, until the recent dramatic fall in hardware prices, their use in many developing countries was not widespread. Even so, a more serious constraint has been that suitable software has not generally been available to solve many development problems. The **Informatics** sub-program, therefore, supports the development, adaptation, and testing of software and systems. Activities supported by the program include systems integration, software adaptation to meet local language requirements, and software development using "expert systems" techniques. In addition, the program encourages the dissemination of information on informatics activities in developing countries and research on the impact of national informatics policies.

Geomatics

The increasing potential of new technologies for geographic data acquisition and data handling opens a new era for better natural resource management. Satellite-based remote sensing offers a cost-effective approach to many developing countries for generating useful information on the physical characteristics of their territories. The **Geomatics** sub-program is aimed at enabling those research institutions wishing to investigate the usefulness and appropriateness of modern technologies and techniques, such as remote sensing, Geographic Information Systems (GIS), and computer-assisted mapping, to respond to the information needs of their countries and regions.

The Project and its Relationship with IDRC

IDRC and its Information Sciences Division have realized that developing countries will be left behind in the rapid technological changes taking place globally, unless increasing efforts are made to help them develop national information services and systems. Therefore, it is critical to assist them to avoid dependence on external sources of information from industrialized countries. Many IDRC supported information projects are considered to be in the *"front line"* of this battle to keep up with the strategic use of information in the field of science and technology.

The Host Institution

Each information project supported by IDRC is situated within a parent institution, usually a national research centre, university or government department. It is important for IDRC to understand the capabilities of the host institution. In particular, IDRC needs to know whether the host institution has the authority to pursue project objectives,whether it has the outreach mechanisms required to assure that the project outputs will be utilized effectively, and whether it has a reasonable prospect for sustaining the project after donor funds are depleted. IDRC requires a *Recipient Contribution* to confirm the institution's commitment to the project.

Because of the relationship between a host institution and the IDRC project, it is important for the project manager to understand the institution's mission and mandate and how the information project fits into it. The project must honor the guiding values and business philosophy of the institution. Information projects cannot be sustainable in the long term if they are planned in isolation or unrelated to the host institution's manifest role.

Methodology

Project outputs are the tangible results, products, and services that have been generated by the project. In order to produce these outputs, the project should follow a sound methodology.

The methodology should be based on:

- Relevance of the objectives to the organization's mission and mandate.
- The options that are available.
- Knowledge of user needs.

To do this the program planners need a full understanding of:

- Clients or beneficiaries. This includes the direct and indirect clients of the

parent institution. For example, the International Agricultural Research Institutes (IARCs) have direct clients which include the national agricultural research institutes (NARs). Whilst their indirect clients are the farmers and landless laborers.

The external environment. Effective project planning should always consider the environment within which the project must function. It can have a great effect on the project's performance. As an example, in the case of the National Agricultural Information Services the availability of regional data bases and international cooperative systems can greatly enhance the delivery of future project outputs.

- Priorities. Planning always involves priority setting. Briefly, setting priorities involves asking and answering the following questions:
  - Who needs the information?
  - What information do they need?
  - How should it be presented?
  - Why is it needed?
  - When is it needed?
  - Where will it be used?

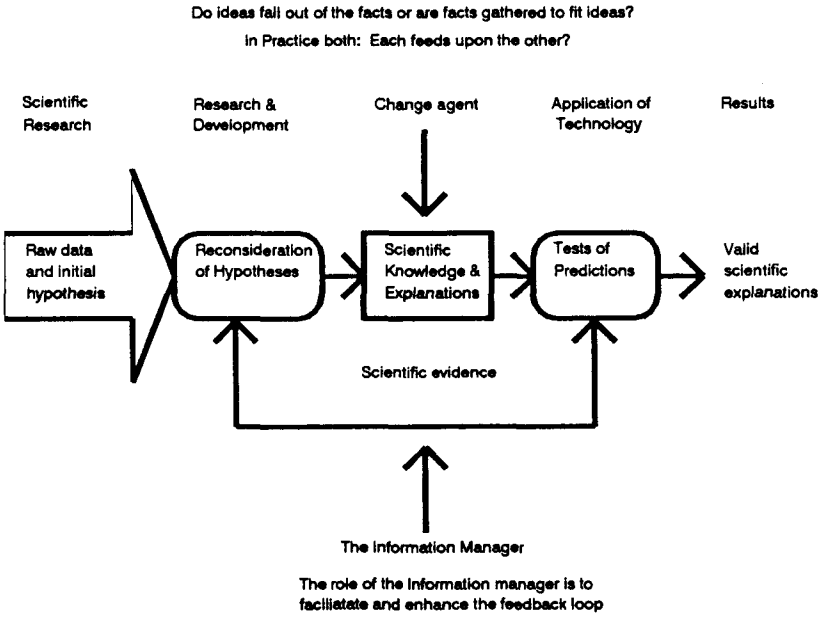
The criteria used for determining priorities include:

- Cost of services.
- Speed of delivery.
- Effectiveness of the information.

Feedback

The most effective managers arrange to have the users involved in the development of the project plans and in the design of the outputs, and continually utilize their views to refine services. (See Fig. 1)

Fig. 1 The Information Manager



Managers who allow their projects to become self-directed (as opposed to user-driven) quickly find that their output begins to lose value among users and clients.

There is a variety of ways that project managers can obtain the input of users including:

- Use of questionnaires and surveys, informal contacts and building networks.
- Conducting frequent user evaluations.
- Organizing *"open days"* or *"information days"* to *"show and tell"* potential users and the parent organization what the project has accomplished to date.

The Project and Its Relationship with IDRC

The project manager must take responsibility for managing the relationship between the project and IDRC. This job is done according to the principles of *"network management"* discussed later. It involves a continuous dialogue internally with the parent institution and externally with IDRC.

Building Commitment

Little success can be expected unless local commitment is high. To strengthen local commitment, it is important to involve representatives of the host institution and related partners in all project procedures from Analysis down to Evaluation and Disengagement.

Seeking Management Assistance

Sometimes it is necessary for a project manager to request assistance from a consultant or specialist. Generally, IDRC looks favorably upon the use of consultants for short periods of time to solve problems, organize workshops, prepare proposals etc. The preference is to hire consultants resident in the region or those that have a good knowledge of local conditions. The usual process is to make the selection decision in consultation with the program officer. When making these decisions, the program officer will want to explore the opportunities for South-South cooperation before agreeing to a North-South link. Most consultancy agreements are administered directly by IDRC. However, when local consultants are used, the project manager is usually responsible for administering the contract. Whether a local, regional or international consultancy agreement is the result, a written consent of agreement with strict terms of reference is required. Also required in each agreement is a written report prepared for the project but which must be made available to IDRC.

IDRC is always ready to offer advice and can often make suggestions about how other projects have solved a particular problem or dealt with a particular issue. Project leaders should not be afraid of approaching IDRC on any matter.

SECTION II

The Project Manager

An Introduction to Project Management

What is Project Management?

A project can be defined as a series of activities that are designed to achieve a certain result. A project must have a goal and it must have specific objectives.

A project starts when the goal and objectives are set. It ends successfully when the objectives are met or unsuccessfully when efforts to reach the objectives are abandoned. A project therefore, always has a beginning and an ending and takes place over a specific period of time.

Because money and time are usually limited, a project has to be organized so that it accomplishes a goal and specific objectives within a certain period of time and with a certain amount of money.

In other words, most projects demand that a certain Performance be achieved for a fixed amount of Money and within a fixed period of Time.

The concept can be summarized by the letters P.M.T. (Performance with limited Money and Time).

A Four Phase Problem Solving Process

Our approach to project management is centred around a problem solving method. The problem solving approach is based on four fundamental steps.

1. Analysis

2. Decision-making

3. Decision implementation

4. Decision evaluation

These phases usually flow one after the other when the project is a response to straight-forward problems.

In more complex situations, the same four phases are used but they rarely flow one after the other. There is often recycling between

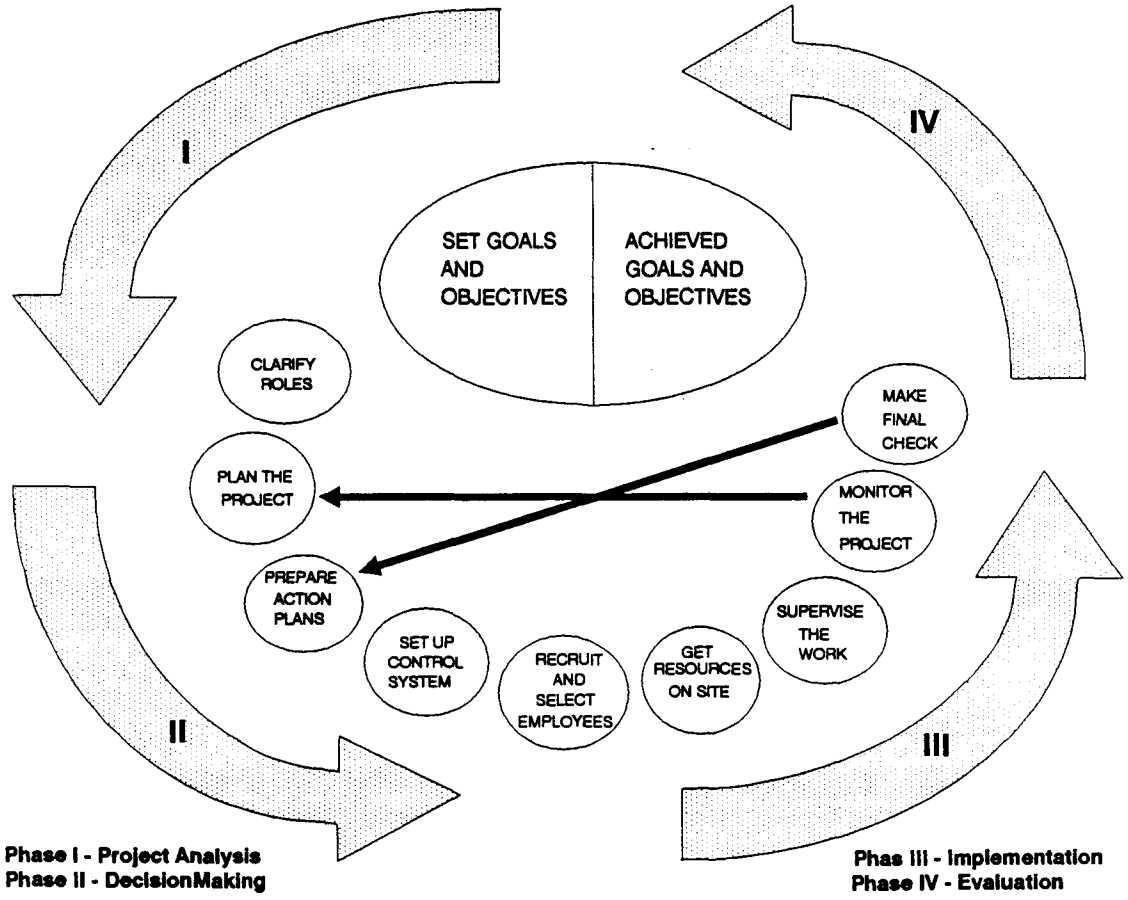
steps; often steps get skipped and sometimes there is activity in all four areas simultaneously.

If we were to diagram a project with each of these four phases represented it would appear as in Fig. 1. Step one is extremely important and stands out when compared to the other steps. The project does not start until the goals and objectives have been set and does not end until they have been met.

There are several feedback loops (as indicated in the diagram). If each project activity goes according to plan, each step will follow the other in an orderly fashion until the objectives are achieved. But if there are problems such as cost overruns, time delays and personnel problems, they will be identified during the Decision Evaluation phase. When problems are identified, the manager will have to go back to the original plan, re-evaluate it and make the necessary corrections or up-dates, and then continue as before through the project steps.

In a normal project, plans would probably be altered or changed many times. Eventually though, the monitoring systems will judge the work to be satisfactory; the final check and

Fig. 1 The Project Management Process



evaluation will be made, and the objective declared accomplished. Only then can the project be said to be completed.

Now lets look at the four phases applied to a simple straight forward problem.

Phase One: Analysis - What is the problem?

To begin the problem must be defined. This simply means describing:

- *Where are you now?*
- *Where do you want to be?*
- *When do you want to be there?*

An example from the development field might relate to agriculture...

WHERE AM I NOW?

"There is no data on farm management available to researchers, Universities and the producers themselves within the region.

WHERE DO I WANT TO BE?

"We want all research stations, Universities and producers to have access to data on farm management."

WHEN?

"By the end of 1992."

Phase Two: Decision Making - What Is The Solution?

This phase has three steps.

1. Generate alternative ways to close the gap between Where we want to be, when we want to be there and where we are now.

2. Evaluate the alternatives.

3. Select the alternatives that are most likely to close the gap and meet whatever conditions or constraints that we are working under.

Referring to the agricultural example.

What are the alternative ways that data on farm management can be made available in the region?

- *Hold training courses for producers throughout the region.*
- *Hold a regional conference for all professionals involved in agriculture research.*
- *Establish a regional Farm Management Centre where a data base on farm management can be established and maintained.*

From these and other alternatives, the regional administration could make a decision and when they decide to implement it, a project is born!

Phase Three: Decision Implementation - What is the best way to implement the solution?)

Project management deals with how to *"manage"* the project to ensure that it takes the client group from *"where they are now to where they want to be when they want to be there."* This involves three major activities...

1. **Planning Activities:** All tasks to be performed are listed and analyzed in terms of who will perform them, when they will be performed, and how they will be carried out. Planning also involves estimating the amount of money needed (budgeting), the amount of time required (scheduling), the sequence and flow of the project activities (work flow planning), the timing of cash inputs and outputs (cash flow

planning), the number and type of people required and all other resource requirements.

2. **Doing:** Tasks are performed and resources consumed according to the plans developed during the planning phase.

3. **Controlling Activities:** Checks are made to see if what is actually happening conforms to the plan and, if not, proper adjustments are made.

Controlling activities have three important elements:

a. A target or standard (these are the project plans)

b. A means of comparing actual performance against the plan. Therefore there must be a measurement or reporting system set up, and

c. A possibility for corrective actions to be taken if the actual results do not compare favorably with the plan.

In other words, a control system must have a feedback loop built into it. The manager must then have the flexibility to respond to the feedback coming from the monitoring, observing and measuring activities and to change the project plan as required.

If the project involves only a few tasks, it may not be worthwhile to commit plans to paper. On the other hand, if the project involves many tasks it becomes very difficult to manage the project without a written plan and a rigid control process.

Phase Four: Evaluation - Did the solution resolve the problem?

The evaluation phase is designed to answer the question *"Are we now where we wanted to be?"* In seeking the answer to this question a good evaluation process may also provide answers to other questions such as:...

- *If we are not where we wanted to be, where are we?*
- *How much did it cost to get where we are?*
- *Did we complete the implementation on time?*
- *What do we do next?*
- *What did we learn?*
- *If we are where we wanted to be, do we still want to be there.*

Going back to the agriculture example where the objective was to make farm management data available throughout the region - suppose that at the end of the first year there was still no progress in establishing a regional farm management centre. How would the regional planners deal with some of these evaluation questions?

Attached are several worksheets that can be applied to the four step project management process.

Worksheet Number 1: Phase One - Analysis

The first part of the Analysis Worksheet defines problems as *"gaps"* that exist between something you want, need or should have, and what you have now.

The worksheet helps to describe what is wanted (on the right hand side of the page} and what exists now (on the left hand side). Since we generally read from left to right, think of time flowing in the same direction.

On the left is "*now*" and on the right is a realistic estimate of when the project will be finished. Enter that date in the blank space after the word "*when.*" The "*gap*" is the time that it takes to go from the present to the desired state. The project will close the gap!

Start With the Goal

It is often easier to start with a description of "what is desired." Starting with what is wanted narrows the focus of the "goal statement." By starting with the desired state, it becomes easier to describe the current situation because the analysis can be limited to those elements that relate to or have an influence on the project goal.

The worksheet provides space for three problem definition statements. The first is a rough draft. The second is more refined, and hopefully more specific, measurable, realistic, and achievable. The third is made only after further analysis on the reverse side of the worksheet.

Whose Problem Is It?

The reverse side of the worksheet focuses on the "*problem ownership*" issue. Whose problem is it? Finding out who owns the problem and how its resolution might impact the lives of those involved may provide new insight into the problem. On the other hand it may not.

Helping and Hindering Forces

The worksheet also focuses on the factors that are working for and against the success of the project.

Without an analysis of the natural forces inherent in the problem situation (some which are helping and others which are hindering movement toward the goal) there is a tendency to think that all that is required to close the gap is to push harder. But when the driving forces are increased, what happens? The restraining forces gain strength as well, and little movement occurs. A wiser strategy is to gain an understanding of the restraining forces and explore what might be done to reduce or remove them. Then, movement toward the goal may be more attainable because the pushing forces that are already there can then be put to work.

Some of questions flowing out of this analysis are as follows:

- If the hindering forces are reduced, are more helping forces needed to achieve movement toward the goal?
- How can the restraining forces be reduced?
- Which forces cannot be reduced? ---- Ever? or just at this time?
- Which helping forces can be increased without increasing the hindering forces?

When the problem has been examined from these perspectives it is possible to write a final definition of the problem. Sometimes more than three drafts are necessary. Sometimes, it comes together after the first attempt.

Don't Let the Worksheet Get in the Way

The worksheets are designed to help manage the project management process. If they do not help, don't use them!

It is not necessary to fill up all the space or answer all the questions on each sheet. Look over the sheet and only answer the questions that you think will help you.

WORKSHEET #1 — Analysis Worksheet

"What is the problem?" – a problem is a gap between "What is" and "What should be" or "What is desired"

EXAMPLE (from workshop)

EXISTING STATE Date _____

what is now? _____

"THE GAP" – how significant is it?

is it worth working on? why? _____

GOAL OR DESIRED STATE

What is desired, should be, etc.? when? Target Date _____

YOUR PROJECT – use the space below to write the first, rough draft of the "problem" that your project is meant to resolve

EXISTING STATE Date _____

what is now? _____

"THE GAP" — how significant is it?

is it worth working on? why? _____

GOAL OR DESIRED STATE

What is desired, should be, etc.? when? Target Date _____

YOUR PROJECT –

use the space below to write the second draft of the "problem" that your project is meant to resolve. Start with "what is desired, should be," etc.? First be as specific as you can in terms of time, quantities and qualities. Be realistic. This will become the goal or objective so make sure it is achievable with a reasonable amount of effort and resources. When you describe "what is now?", describe it with reference to the same elements that are dealt with in the "what is desired?" statement. Again, be specific, measurable and accurate.

EXISTING STATE Date _____

what is now? _____

"THE GAP" – how significant is it?

is it worth working on? why? _____

GOAL OR DESIRED STATE

What is desired, should be, etc.? when? Target Date _____

"What is the problem?" — now that you have a definition of the problem, you may want to look at the problem from some other perspectives to gain more understanding of it.

Whose "problem" is it?
List below the specific individuals and/or groups of individuals who will be affected if this "problem" is resolved. Consider both positive and negative impacts. For each individual or group, indicate how the successful resolution of the problem would impact their lives.

	Individual or Group	Impact of project on their lives
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

Helping forces
(list below any factors that might help ensure that your project succeeds. Indicate how it might help if you can.)

-
-
-
-
-
-

Hindering forces
(list below any factors that might work against the success of your project. Indicate how each factor might work against you.)

-
-
-
-
-
-

Your project:
the final problem definition (use the space below to write the final "problem" definition if you have made any revisions as a result of thinking more about the "problem")

EXISTING STATE Date _____

what is now? _____

"THE GAP" — how significant is it?

— is it worth working on? why?

GOAL OR DESIRED STATE

What is desired, should be, etc.? when? Target Date _____

Have fun with the worksheets. Treat them as something that can be played with rather than as a series of questions that have to be answered. Let the worksheets provide some structure to plan the project. But, within the structure, doodle, scribble, write notes and even ignore some questions. Let the worksheets provided guide you toward a very solid project plan.

More About Goals and Objectives

A project must have a certain goal and specific objectives which must be accomplished within a certain period of time and with a certain amount of money.

The goal statement should describe in a general way the purpose of the project. It results from the problem analysis process and states in specific terms what the desired state will be.

A good goal statement should be a *SMART* goal. *SMART* is an acronym which identifies the criteria of a good goal statement.
They are as follows:

Specific - A good goal statement is specific. It describes exactly what will be accomplished.

Measurable - The goal statement should be measurable. It should be written so that at the end of the project one can determine whether or not the goal was achieved.

Action oriented - The statement must be action oriented. It must be written using a verb which describes what is to be done.

Realistic - The statement should be realistic. It should be attainable. It may demand a stretch or a lot of hard work to accomplish but it should be possible to accomplish.

Time Bound - The statement must include a time frame. It must describe what is to happen or what is to be accomplished within a certain period of time.

Very often the manager will divide the goal statement into a number of objectives. Objectives are smaller and more specific than the project goal. Objectives are used to describe what one person in the project must accomplish or what one phase of the project action plan is to achieve. When all the objectives are achieved the project goal is automatically achieved.

Project Activities

Another characteristic of a project is that it is made up of a number of activities. For example, a construction project can be divided into the following activities:

- Choose a site.
- Hire an architect.
- Prepare the site plan.
- Prepare the design plans.

If the project goal is to be successfully reached, these activities must be managed. Without management, the project would flounder and it is very likely the goal would never be achieved.

What is Management?

Whenever the actions of several people must be directed toward a common goal there is a need for management. Management can be formally defined as the process of organizing and employing resources to reach a goal. Generally, management is responsible for the success or failure of a project. It is responsible to see that available resources are used in the best way possible.

What is Project Management

Project management is the process of organizing and using resources to accomplish the goals and objectives established for the project. It is concerned with using resources efficiently - that is, achieving a certain *Performance* with a fixed and limited amount of *Money* and *Time* (T).

The Functions of Management

A manager has many jobs to do - preparing schedules and budgets, supervising, motivating and disciplining employees, purchasing materials, dealing with contractors and sub-contractors and so on. All of these tasks can be classified into four functions called the functions of management. They are: Planning, Organizing, Directing and Controlling.

In Figure 2 these functions have been incorporated into the diagram of the project management process.

The expanded diagram shows how a manager must plan, organize, direct and control resources to proceed through the four phases toward the objectives.

Because the diagram depicts a process that has a beginning and an ending, it illustrates a unique aspect to the project manager's job.

Most managers plan, organize, direct and control in order to keep their institution viable. A project manager, on the other hand, is constantly trying to work himself out of a job. He works to complete a project as soon as possible. When the project is finished, he moves on to a new job, perhaps quite different from the one just completed and probably located at a different site.

Planning

Earlier we saw that planning was a very important part of project management process. Two of the phases in our diagram of the project management process are directly concerned with planning: Step 1: Problem Analysis and Step 2: Decision Making.

Now we want to look at planning as a function of management. Planning is one of the major components of a manager's job. Managers must be future oriented. They must be concerned with questions such as, *"What is to be done?"* and *"How is it to be done?"*

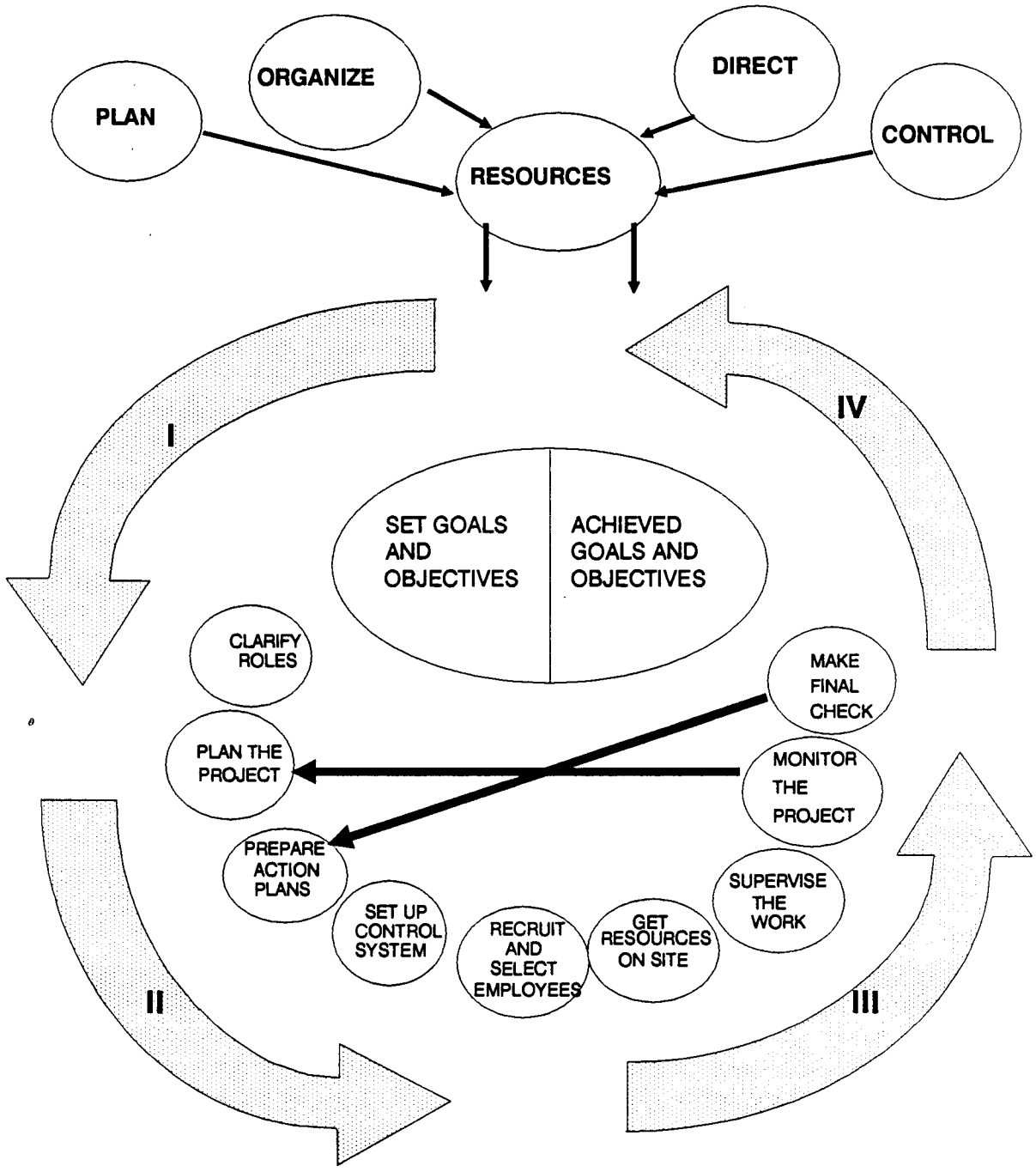
Planning must continue throughout the life span of the project. The manager does not stop planning after he has developed the action plan. Managers must be continually planning because events and situations are constantly changing. This means that plans must be revised, up-dated or even extended to deal with new information or a changed environment.

Project managers must do different types of planning. They must plan the use of money (budgeting), the use of time (scheduling), the use of personnel (manpower planning), and the work flow which involves the use of specialized planning techniques such as a network diagram and critical path analysis.

Organizing

To be of use, plans have to be carried out. Organizing means obtaining the necessary resources and co-ordinating these to complete the project.

Fig. 2 The Project Management Process



Phase I - Project Analysis
Phase II - Decision Making

Phase III - Implementation
Phase IV - Evaluation

Organizing is arranging. It is that function of management that brings together the required resources in an orderly manner and establishes work relationships between employees so that they can use these resources to accomplish the goal. Organizing involves looking at the different positions on a project and making arrangement so that all employees can work well together.

A project can quickly grind to a halt if there are no rules of order. It is necessary to know who is the boss, to whom one reports and what one is supposed to do. Organizing is the management function that assures that the project proceeds in an orderly fashion, that the employees know what is expected of them, and that they work together efficiently.

Directing

The third function of management has to do with directing employees. Directing is initiating the actual work to be done. It is issuing orders and guidelines and supervising people as they do the work.

Directing can be defined as the job of stimulating the organization; to do the work outlined in the project plan. It is the job of getting all the project staff to work together to achieve objectives.

Since work is done by people, the manager must have good *"people"* skills. He must be able to lead, motivate and communicate, counsel and discipline.

Directing is a complex job since it involves combining the project plans, the project's organizational structure and the employees (with their needs) into an operation that works effectively.

Controlling

Controlling is the fourth management function. It involves measuring the performance of the project to see that the plans are being followed and the objectives are being met. If not, corrective action must be taken by making new plans or improving the organization.

Involved in controlling is policing events and following up on the various activities to ensure that what is planned for is accomplished.

Controlling is done to assure that the project is moving ahead as intended. Without control, the manager would not know how the project is doing or where it is headed.

Control must be exercised over: cost, time, personnel and work flow.

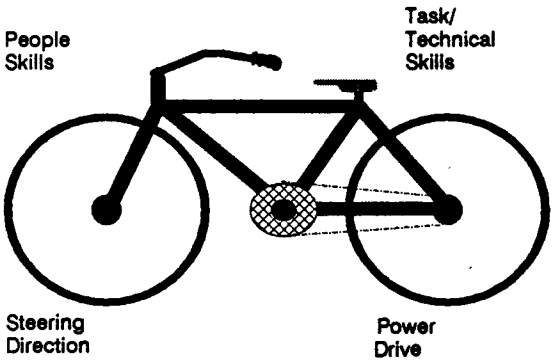
The Project Manager

The project manager must be a planner, an organizer, a director and a controller. He is essentially a professional *"resource manager"* who is responsible to co-ordinate the use of resources so that a specific target is met.

A project manager should be chosen for the job based on his ability to guarantee a certain *Performance* with limited *Money* and *Time*. To do this a project manager needs a combination of technical and people skills.

A bicycle can be used as an analogy to further explain the skills required for project management. (Fig. 3)

Fig. 3 The Bicycle Model (The Ideal Design)



The back wheel of the bicycle provides the drive and power. It is analogous to the technical skills that the project manager of an IDRC supported project needs to manage an information activity. These skills may include: the ability to organize research materials, to compile bibliographies, answer inquiries on specified topics, to build a data base etc. The information manager requires these skills to provide the drive and power necessary for the project team to move toward the project goal.

The front wheel provides the steering and direction. It is analogous to the *"people"* skills that the project manager needs to steer and direct the project team toward the goal. Front wheel skills include the ability to resolve conflict, communicate effectively with employees, conduct goal setting meetings, involve the project team in planning meetings, etc. Without the front wheel skills the project team may have a lot of expertise which is just not being focused on the goal. The badly designed bicycle as depicted in Fig. 4 clearly shows what sort of bicycle would represent a poorly designed project.

The bicycle of the Ideal Design is a useful analogy because an efficient bicycle is one which is balanced - one which has a balanced front and back wheel. The effective project manager is one who demonstrates a balance between front and back wheel skills. It is an analogy we like to think of in terms of a well run IDRC supported project.

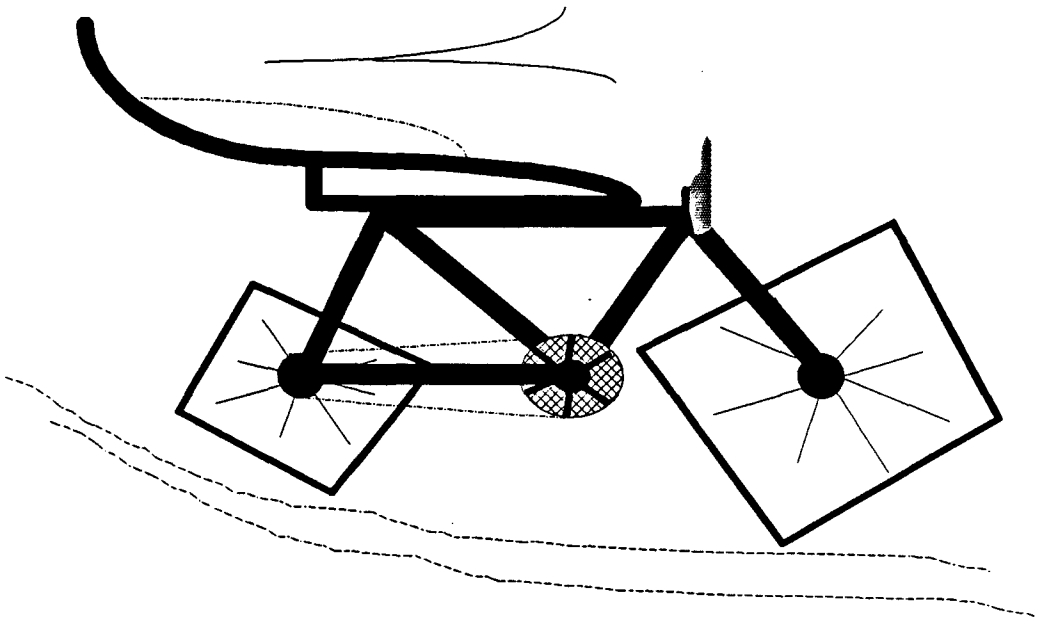
The manager who has a great big back wheel and a small front wheel is a person who although an expert in his field, cannot work with others effectively. As a result, his technical knowledge is wasted because he does not have the skills to influence others in a way that allows them to utilize these skills.

The manager who has a great big front wheel and a small back wheel is not effective either. Here is a person who has good leadership and influence skills but has no technical knowledge to apply to the problem at hand. The result is that people see him as nice to have around but not very effective at directing the team toward its objectives.

The skilled project manager is one who has the technical knowledge to apply to the project and also the leadership and communication skills to use this knowldege in the context of the project team.

Fig. 4 The Bicycle Model (The Flawed Design)

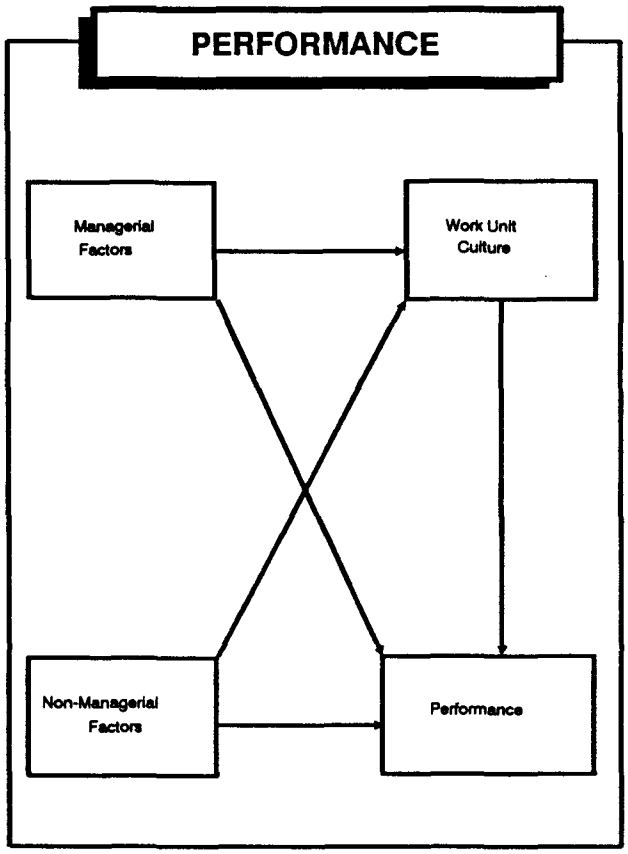
1. Basic frame (often provided by donors).
2. Square wheels to prevent cost over-runs.
3. Rear wheel smaller than front so that progress is always uphill.
4. Rear light to assist with hindsight.
5. Large seat to accommodate the steering committee.
6. Layed back driving position and absence of steering mechanism allowing for hands-off management.



The Effective Project Manager

The Project Manager's most important consideration is *"What can I do to improve performance?"* As we have seen, this question is the essence of project management - achieving *Performance* with limited resources, namely *Money* and *Time* (PMT).

Fig. 1 A Performance Model



Recent research suggests that not only does the project manager have an effect on performance - he has a major effect. There are other variables involved such as the skills of the project members, the size of the budget, the accessibility of the work site etc. All have a bearing on performance. But the major difference between an effective project and an ineffective one is the behavior of the project manager.

Figure 1 indicates that the bottom line for any project manager is performance. Performance will, of course, be measured differently in each case. It may be the number of items entered onto a data base, the number of entries in a bibliography or the completion date for a new information centre. Somewhat surprisingly, regardless of the project and the results expected, the most important influence on performance is the *"project culture."* Project managers should be concerned about their impact on the project culture because this impact has a direct effect on productivity.

Project culture is a term which defines the environment or the morale of the project team. It refers to what it is like to work on that project with that particular manager and group of coworkers.

Project managers should not limit their roles to being the group leader. Nor should they be content to increase the productivity of the individual group members. Within a project, where the emphasis must be on productivity, management must focus on its impact on the project culture.

The major difference between a project with low productivity and one with higher productivity is the performance of the project manager in terms of the effect on the project culture. This makes the manager, more than any other factor or variable, responsible for the ultimate performance of the project team.

The good news is that managers can be trained to have a positive impact on their project culture even within the constraints imposed by the organizing institution.

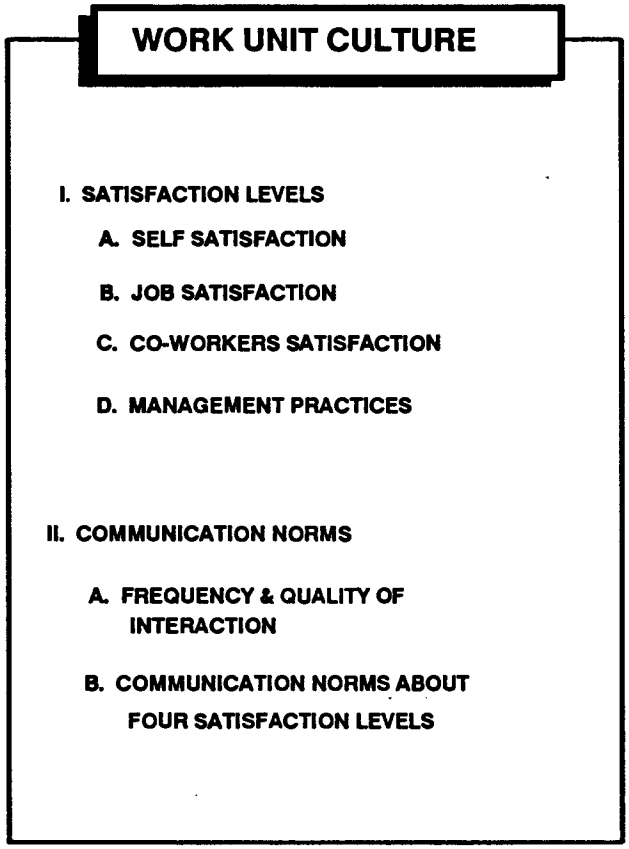
The Project Culture

There are two major determinants of project culture.

In a positive project culture, people are obviously highly satisfied with themselves, their job, their co-workers and their managers. A project with a less healthy culture is one where people may be dissatisfied with one or more of these variables.

The second major determinant of project culture is communication. Here we are simply concerned with the amount of communication. In a positive project culture people talk more than they do in a culture that is less positive. What do they talk about? We will see later that they talk about performance issues. Casual conversation about non-performance issues does little to produce a positive project culture. But, the degree to which the project manager directs the project team to talk about performance issues on a hour-by-hour, day-by-day basis is a major determinant of the degree of positiveness of the culture.

Fig. 2 Determinants of Project Culture



The Culture/Performance Link

As Fig 1 suggests, any increase in the positiveness of the project culture will translate into increased performance. The model also suggests that the manager has a great influence on the culture and therefore, on the performance of his team. Regardless of how increased performance is achieved, it will only be sustained when the production levels become a part of the culture.

It is interesting to consider the relative importance of the two variables satisfaction and communication. Consider the chart in Fig. 3.

Obviously when there is a lot of communication in project the environment and people are satisfied with themselves, their job, their co-workers and the way they are managed, performance will be high.

However, when there is a lot of communication in spite of the fact that people may be dissatisfied about some aspect of the project, performance will still be relatively high. The members of the team may be dissatisfied but at least they are talking about their dissatisfaction.

Fig. 3 Satisfaction vs. Communication

Four Project Cultures				
	1	2	3	4
Communication	High	High	Low	Low
Satisfaction	High	Low	High	Low
Performance	*High*	*Moderately Low*	*Moderately Low*	*Low*

This means that problems are in the open and there is potential to solve them.

The third case shows that satisfaction is high and communication is low. This situation is less favorable than where communication is high and satisfaction low. Of the two variables communication is the most important. This third situation could be described as a project made up of a group of "*lone rangers.*" They are very satisfied with their job but they do not share their satisfaction with others. They do not communicate well with other members of the project team. This makes it difficult to learn from each other, to develop the less skilled members of the team and to continue growing and getting better.

When both satisfaction and communication are low the resulting project culture would be quite devastating. Can you imagine working as a member of a project team where people were dissatisfied and were not even talking about their dissatisfaction? No wonder production would be low.

How do effective managers influence culture? What is it that effective managers do in this regard that ineffective managers do not?

Managing Culture - The Five Factors

Effective managers - managers who have a positive effect on the project team, - do a good job managing the five factors.

They are mission, goals, feedback, rewards and support. Each of the factors relates to a basic question the employee has about the project and how he fits into the project team. The questions are as follows:

- Why am I here?
- Where am I going?
- How am I doing?
- What's in it for me?
- Where do I go for help?

1. Managing Mission

Managing Mission involves answering the employee's "*Why am I here?*" question.

The degree to which the employee identifies with the project is called a sense of mission. This involves having a reason for belonging to the project team - a sense of pride and affiliation with the project.

There is a familiar story about three bricklayers. The first, when asked to describe the work that he did replied, "*I lay bricks.*"

Fig. 4 The Management Skills

The second, when asked the same question replied, *"I am building a wall."*

The third replied, *"I am building a cathedral."*

Needless to say, it was the third bricklayer who had a sense of mission and who was the most productive employee.

This example has direct relevance to the mission of many information projects that IDRC supports. The individual projects may be likened to the bricks. IDRC does not encourage the creating of individual bricks but rather the combination of these individual bricks into an overall structure. These structures are the national, regional and global information systems and networks that make up the broad range of information science projects.

Effective managers use communication and leadership skills to help the project worker achieve a sense of mission by stressing how important each specific job is and how it contributes toward the accomplishment of objectives. Ineffective managers often do not do a good job of this and leave the employee confused and wondering how his particular job is contributing to the success of the project.

If the manager does a good job answering these questions, the effect is a positive contribution to the project culture. If the employee is left with any of his/her questions unanswered, the effect is a negative contribution to the project culture.

Managers working on information projects should be very good at managing mission. They are usually very committed people - committed to making things better for their fellow man by encouraging the mutual sharing of information.

2. Managing Goals

Managing goals involves providing members of the project team with the answer to the *"Where am I going"* question.

It is the project manager who is responsible to see that the project employees clearly understand what is expected of them. In this respect, the manager through the use of good communication and leadership skills, must provide an environment which allows for the tying of individual job performance to the accomplishment of the project goal.

The ineffective manager, on the other hand, leaves the *"where am I going"* question unanswered. The result is so much confusion for the employee that he is unable to focus on what has to be done. Energy is wasted trying to figure out what to do, what is important and so on. The result is a productivity loss.

3. Managing Feedback

When a manager manages feedback, he is providing information about how an employee is progressing toward a goal. Good feedback answers the *"How am I doing?"* question for the project team.

Most managers are weak in this area. They often feel uncomfortable telling the employee *"good news"* about good performance and *"bad news"* about performance that has to be improved. The result - the employee really does not know how he is doing. As a result of this absence of managerial feedback, the employees will invent their own. In most cases this invented feedback will be inaccurate and unrealistic.

Studies show that when the employees of ineffective managers are interviewed about performance, they all feel that they are doing well. They all feel that they are among the top performers even when, in fact, they may be a low performer, a moderate performer or a high performer.

Effective managers, on the other hand, provide feedback in sufficient quantities so as to prevent it from being made up by the employees.

The feedback provided by the effective manager is always relevant. It is always tied to the goal and to the *"where am I going"* question. It is clear, consistent and delivered frequently. Effective managers do not view feedback as punishment for either the manager or the subordinate.

In fact, feedback should be completely non-judgemental. It should be like a gas gauge in the car. It simply gives feedback about the level of petrol in the tank. It does not make a positive or negative statement about the information it is telling you. A weigh scale works the same way.

Within the project structure, feedback can come from the manager, the employees, the job itself, the appraisal system or the employee's observations and perceptions.

Feedback should be:

- Neutral.
- As soon as possible after performance.
- Frequent.
- Related to goals.
- Accurate.
- Concise.
- Usable.

One effective way of providing feedback is through the use of graphs and charts. They provide a concrete and visual meaning to data. You can see current performance in relation to past performance. It is best when the chart is updated by the employee and not the manager. In this way it becomes a guide to performance rather than a report card.

4. Managing Rewards

Managing rewards involves answering the *"what's in it for me?"* question. It is important to differentiate *"feedback as information"* from *"rewards as reinforcement."* Rewards are the consequences that accrue to the employee for doing good work. Feedback is the information provided to the employee about how he is doing in terms of progressing toward the goal the attainment of which may result in a reward. Feedback, therefore, always precedes rewards.

It is important that the manager of an IDRC supported project find out what they can do to reward good performance within the constraints of the project and the organizing institution.

Rewards that are personal, social, immediate and tied to specific behaviors are much more effective than those that are impersonal, organizational, delayed and not related to specific behaviors.

Effective managers *"tailor"* rewards to the needs of the specific employee. They realize that *"different folks require different strokes"* and that it is the manager's duty to find out what reinforces each team member.

Effective use of rewards allows the employees to make clear distinctions between what happens to them as a high performer as opposed to what happens to them as a marginal or low performer. But, at the same time, employees want to be treated fairly and with equity.

Effective managers also realize that the high performers probably need as much reinforcement to sustain their behaviors as low performers need to change theirs. In a positive work culture, the manager uses leadership style to treat different levels of performance differently. As well, members of the project team begin to reinforce each other and use that reinforcement to contribute to their own positive project environment. The point is that the effective manager, must provide an environment in which people can reinforce each other for doing good work. Such an environment is what we call a positive work culture.

5. Managing Support

When a manager provides support he is addressing the question *"Where do I go for help?"* In a positive work culture employees know that when something goes wrong they can seek and obtain help from other members of the project team. They realize that seeking help is the responsible thing to do if the project goals are to be achieved. In a positive project culture, employees can seek help without negative consequences. Effective managers, through their behavior, minimize the negative consequences that

accrue to anybody who seeks help by maintaining a supportive climate.

The Uncontrollable Factors

The five factors discussed above are all controllable - they relate how managers behave or do not behave. There are, however, as illustrated in the model in Fig 1, some uncontrollable or non-manageable factors which have some influence on the project culture and therefore, performance. Here we are talking about factors such as the project location, the number of resources, personal concerns of the employees, the state of organization (or disorganization) of the host institution etc.

The research indicates that although these uncontrollables do affect the project culture, their influence in not as strong as the influence of the project manager. Of all the factors that impact the work culture, the project manager's behavior is the most significant.

This means that the difference between an ineffective and effective project can usually be observed in the positiveness of the project culture. It also means that the single most important influence on this difference in the work culture is managerial performance and how effectively or ineffectively managers have answered the five important questions discussed above.

The project will have a culture regardless of managerial actions. The effective project manager, however, builds a positive work culture through his behavior and communication and leadership skills. It is this positive project culture which then yields high productivity.

Answering the Five Questions

The theory is very simple. Provide the employees with information that they want about their job (communication) and they will be more satisfied and contribute in a positive way to the project culture. The result will be increased productivity.

The five questions that we have introduced are so important that if management does not provide the answers, the employees will provide their own. Unfortunately, the answers they come up with are usually wrong. The wrong answers to these basic and important questions will create a lot of confusion, inequity, and distraction among the project team members and will have a negative effect on productivity.

Management By Walking Around

This model indicates that effective project management is an active process. The effective project manager does a lot of walking and talking. Talking about what? Talking about performance. Talking about mission, goals, feedback, rewards and support. Providing answers to the five key questions that every project employee has about themselves and their jobs. We often refer to these activities as the *"Yak Factor."*

Studies indicate that this is exactly what happens. We have coined an expression that describes the typical project managers day. It is characterized by *"managing by walking around."* The effective manager engages in many different conversations each day. Many of these conversations are ad hoc, unorganized, and happen in the hallway, at the project site or as a result of being interrupted. Few of them are planned and often they are short and disjointed. But the effective project manager relates each one of these conversations to performance - to

Fig. 5 Team Interaction Rating Form

Team Interaction Rating Form

	Hardly at all				Somewhat					To a High Degree
1. Members are allowed flexibility in choosing tasks and made to feel competent.	1	2	3	4	5	6	7	8	9	10
2. There is a feeling that the team as a whole could accomplish more than the individuals separately.	1	2	3	4	5	6	7	8	9	10
3. All team members feel responsible for all of the team's actions, not just their own.	1	2	3	4	5	6	7	8	9	10
4. There is a consensus on the goal chosen and a high level of commitment to accomplish the goal.	1	2	3	4	5	6	7	8	9	10
5. There was non-judgemental communication during the team meeting and during the performance between all team members and the leader.	1	2	3	4	5	6	7	8	9	10
6. All members concentrated on the task at hand during the team meeting	1	2	3	4	5	6	7	8	9	10
7. There is an attempt to make the best use of the unique skills of each team member and listen to all of their needs.	1	2	3	4	5	6	7	8	9	10
8. The team has a well-worked out strategy for approaching the problem during the meeting.	1	2	3	4	5	6	7	8	9	10

the five questions and the five managerial factors thus contributing in a positive way to the culture and performance of the project.

Characteristics of the Effective Project Team

Before proceeding with this section, think of your project team and rate its performance using Fig. 5.

A high performing project team with a positive work culture and a leader who is committed to managing the five factors is one that is easily recognizable. It has a certain high performance feel or buzz to it. People are working hard but are enjoying their jobs. They all recognize the contribution that they are making to performance; they are committed to making that contribution and they enjoy the interpersonal interactions that are a part of being a team member.

At IDRC and within different institutions where many different project teams and departments are located, it is possible to monitor different work cultures by just *"walking around."* Ever notice that the atmosphere of each department, of each floor or each work unit is different. One can get an indication or *"feel"* of what this culture is like in a very short time.

Simply observing the work cultures around you will give you some clues as to performance levels. Your observation will be subjective but probably fairly accurate. These observations will, as the theory suggests, reflect on the management of the unit. Behind every high performing work unit is a manager who is effective at building this positive work culture. Behind every lower performing work unit is a manager who could be more effective at managing the five factors.

There are eight characteristics of an effective project team. Although they cannot be observed directly, they can be felt (and observed indirectly) by just spending a bit of time in a particular work unit.

1. **Participative Leadership.** The team members are allowed by their leader to have some flexibility in choosing tasks. They are involved to some degree in the design of their own jobs. Giving people the opportunity to match their area of interest with what has to be done contributes to a positive work culture.

As well, participative leadership implies that the leader is active and skilled at providing rewards and support to team members so that they feel competent and have the opportunity to get better at what they do.

2. **Team Focus.** The team members feel that as a whole they can accomplish more than the individuals can separately. The work culture is supportive and focused on helping each other meet goals.

3. **Shared Responsibility.** The team members feel responsible for all the team's actions not just their own specific task.

4. **Aligned on Purpose.** The team members have reached a consensus and have made a committment to a specific goal. Although each may have individual objectives, they realize that accomplishing these objectives is only important in that they help the team move closer to the overall goal.

5. **Open Communication.** There is non-judgemental communication during the project between all team members and between team members and the leader.

The opposite of open communication can be described this way. The leader and/or the team members *"know it all"* or *"want it all"* or *"don't care at all."*

Know it all - This expression summarizes individual behaviors that can be described as being very judgemental or characterized by an air of superiority. Both represent defensive behaviors which contribute to a negative work environment. The opposite of a *"know it all"* behavior is understanding rather than judgemental and is characterized by equality rather than superiority.

Want it all - This expression summarizes individual behaviors that can be described as self-centred, opinionated, controlling or manipulative. They are all behaviors that can be called selfish and which have a very negative impact on a project team. More productive behaviors include: being open and willing to share rather than being self-centred and opinionated and willing to take a flexible problem solving approach rather than attempting to control or manipulate the actions of others.

Don't Care at all - This expression summarizes attitudes or behaviors that can be described as uninterested or uninvolved. To make a positive contribution to the work culture requires behaviors that can be described as caring, involved and interested.

6. **Task Focus.** All members are able to concentrate on the task at hand. It is the project and the desire to accomplish the project goals that brings everybody together.

7. **Creative Talent** . There is an attempt to make the best use of the unique skills of each team member and to listen to each member's suggestions.

8. **Rapid Response.** The team has a well worked out strategy. Each member understands the strategy, has been involved in some aspect of its design and is committed to following it in order to accomplish the project goal.

How is Your Team Doing?

Refer back to the questionnaire that you completed in Fig 5. Each question refers to one of the eight characteristics of an effective team.

The reference is as follows:

- Question #1 - Participative Leadership
- Question #2 - Team Focus
- Question #3 - Shared Responsibility
- Question #4 - Aligned on Purpose
- Question #5 - Open Communication
- Question #6 - Task Focus
- Question #7 - Creative Talent
- Question #8 - Rapid Response

Take a minute to consider your team. Where are your strengths? Where are your weaknesses? What can be done to improve your scores?

The Leader/Manager

What is the difference between what effective managers do and what ineffective managers do? We will examine this question and try to discover the difference between effective and non-effective leadership behaviour.

For years, when people talked about leadership style, they identified two extemes - autocratic and democratic. Autocratic leadership was seen as based on position power and the use of authority, while democratic leadership was associated with personal power and follower participation in problem-solving and decision-making.Tannenbaum and Schmidt, in their classic Harvard Business Review article *"How to Choose a Leadership Pattern"*, argued that these two leadership styles - autocratic and democratic were either/or styles of leadership and therefore fell along a continuum from very authoritarian leader behavior at one end to very democratic leader behaviour at the other end.

Further research done by Ken Blanchard and Paul Hersey, two researchers at the Centre for Leadership Studies at Ohio State University, have shown that leadership styles tend to vary from situation to situation and that it is not helpful to think about leadership as a either/or continuum. Their work has provided us with a very practical approach to examining what leaders do and what makes some more effective than others. They call it Situational Leadership.

While developing the theory, extensive observations were made of managers in action. These observations were made on two groups of managers - those who were very effective in their job and those who were very ineffective. The observers, of course, didn't know whether they were observing the effective managers or the ineffective ones.

As they observed managerial behaviour they noticed that it could be classified into two broad categories. One they called Directive Behaviour and the other Supportive Behaviour.

Directive Behaviour

Directive behaviour was defined as the extent to which a leader engages in one-way communciation; spells out the followers role and tells the follower what to do, where to do it, when to do it, how to do it; and closely supervises performance.

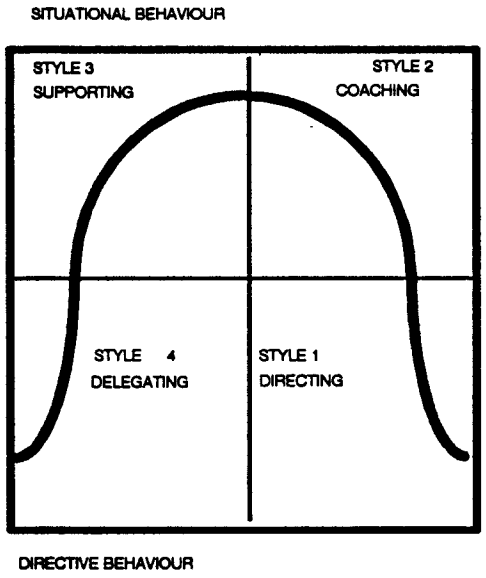
Supportive Behaviour

Supportive behaviour was defined as the extent to which the leader engaged in two-way communication, listens, provides support and encouragement, facilitates interaction, and involves the follower in decision-making.

Leadership Style

Leadership style can now be defined in terms of the amount of directive and supportive behaviour the leader exhibits. The observers identified four distinct leadership styles shown on the grid below.

Fig. 1 Leader Behaviours



Directive behaviour is identified along the horizontal axis and supportive behaviour is represented along the vertical axis. The grid was used to plot leadership styles as they were observed among the managers in the study group.

As the results came in the researchers realized that managerial behaviour could effectively be described through the use of four leadership styles.

1. High Directive / Low Supportive

This style could be described as the "*tell*" syle of leadership. Managers whose behaviour fit this pattern spent a higher than normal amount of time telling people what to do, when to do it, how to do it, etc. Their style was characterized by the use of very directive behaviour and a need to closely supervise the work being done. Problem-solving and decision-making were initiated solely by the manager then solutions and decisions were announced.

2. High Directive / High Supportive

This style could be described as the "*consulting*" style of leadership. Leaders who were observed to be using this style used a higher than average amount of both directive and supportive behaviours. That is they not only told people what to do and how to do it but they were also encouraging and warm toward the fol-

lower. The leader has now increased the amount of two-way communciation and supportive behaviour. He attempts to hear the followers' feelings about decisions as well as their ideas and suggestions. While support is increased, control over decision-making remains with the manager.

3. Low Directive / High Supportive

This style of leadership was labelled as the *"participating"* style. It is the opposite of Style 1. In this style the amount of control the leader exercises over problem-solving and decision-making shifts significantly. Style 3 allows the leader and follower to share in problem-solving and decision-making. Two way communication is increased. The manager's role is to actively listen and facilitate problem-solving on the part of the follower. The manager therefore is warm, encouraging, friendly and supportive but offers little in the way of direction.

4. Low Directive / Low Supportive

This style was called the *"delegating style"*. Using this style the manager delegates all problem-solving and decision-making to the follower. The follower obtains significant control over how the work is to be done and is basically, allowed to run their own show.

Which Style is Best?

The observations that were made on managerial behaviours yielded information about:

- Which leadership styles were used by the effective managers?
- Which leadership styles were used by the ineffective managers?

The researchers had hypothesized that Style 2 would be the one used by the effective managers most of the time. In other words, they felt that Style was the *"best"* style.

The results were surprising. They found that the effective leaders showed no signs of favoring Style 2. In fact they could not distinguish the behavior of the effective managers from that of the ineffective ones. There were effective managers who used each of the four styles and ineffective managers who used each of the styles as well.

Further study revealed that there were two major factors that seemed to make a difference between the way the effective managers behaved as opposed to the way the ineffective managers behaved.

The first factor was one of high risk or emergency conditions. Whenever there was risk to personnel or property it was obvious that Style 1 worked the best. Style 1 demands directive behaviour on the part of the leader. It is apparent that when danger is involved, people need a leader who can take charge.

The second factor was the skill level and motivation of the followers. The lower the level of skill and motivation, the more likely Style 1 and Style 2 would be effective. The higher the level of skill and motivation, the more likely styles 3 or 4 would be effective.

A self-scoring questionnaire called Leader Behaviour Analysis II which is available from the Manitoba Institute of Management, is designed to help you discover your leadership style. Its score sheet is also designed to determine your *"flexibility"* and your *"effectiveness."*

The style flexibility score measures the degree to which you use each one of the four styles with

show the ability to use each of the four different styles.

The style effectiveness score measures how effective each of your leadership style choices were for each situation. A low score is obtained when you choose a number of fair or poor leader style choices for each of the situations described in the questionnaire. A high score is obtained when you choose mostly good and excellent leader style choices.

Development Level

We mentioned earlier that one of the most important considerations that the leader must make when choosing a leadership style is the skill and motivation of the follower. We call this the development level of the follower.

Development level is always related to two factors: skill and motivation.

Skill Level - Can the Follower do the Work?

Here we are talking about the follower's skill, knowledge and abilities to do a specific task. This can vary from task to task since it is common for a follower to be very skilled in one task and not so skilled in another.

Motivation Level - Will the Worker do the Work?

Here we are concerned with the level of motivation and interest the follower has in a specific task. Again this is task specific and could be high for one part of the job and low for another.

Skill and motivation levels when considered together determine the Development Level of the follower. For convenience a four point scale has been designed to relate development level to leadership style. Figure 2 illustrates this scale.

Movement from left to right on the Development scale is indicative of follower growth in both skills and motivation.

Development Level 1 - The Enthusiastic Incompetent

It is assumed that most workers start out on a new task with low skills but with some enthusiasm. Therefore these people are often labelled the enthusiastic incompetents. They don't know enough to do a good job but are highly motivated to try anything. The danger is that they will go ahead and try to do something without adequate supervision and make a serious or costly mistake.

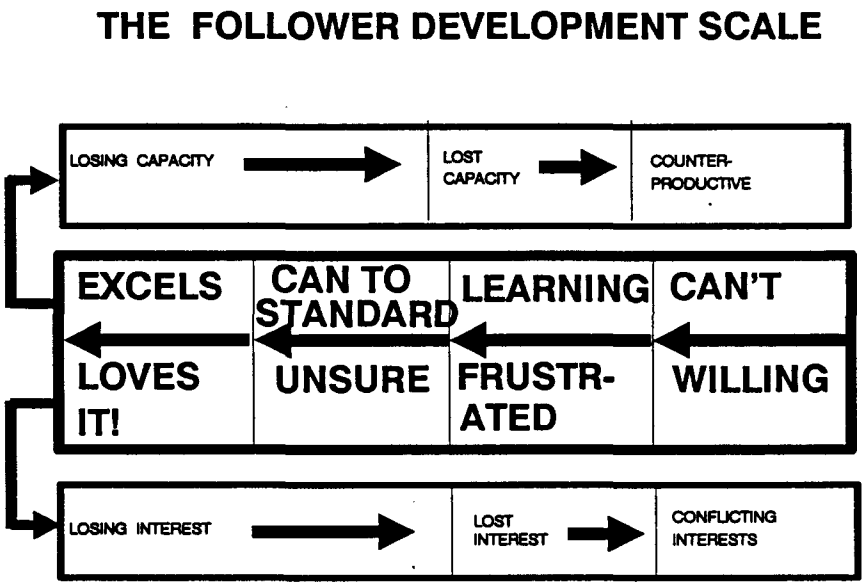
The researchers found that effective leaders used a S1 style of management when dealing with the D1. Thus, they were able to give the follower what he needed: the direction, guidance and know-how to perform the task. The effective leader realized that the D1 can be dangerous to the project and the project team without close supervision.

Development Level 2 - The Disillusioned Learner

Development level 2 is characterized by a drop in motivation. Perhaps the follower finds the task more difficult to master than predicted. Perhaps he is discouraged by the length of time required to master the task. When this happens we get a *"disillusioned learner."*

The researchers found that the effective leaders when dealing with a D2 used a S2 style of management - a style that was both highly directive and highly supportive. They continued

Fig. 2 The Follower Development Scale



The researchers found that the effective leaders when dealing with a D2 used a S2 style of management - a style that was both highly directive and highly supportive. They continued to give the follower direction because they had not yet mastered the task and were still concerned about skill level. At the same time they provided a lot of support because the followers needed help to get through their self-doubts.

Development Level 3 - The Reluctant Contributor

The D3 follower is characterized by having the skills to do the job but yet lacking the self-confidence to try it on their own. This state is often the result of too much S2 behaviour (high direction and high support) on the part of the leader. Then, when the leader tries to reduce the amount of direction given, the follower may be afraid to proceed on his own.

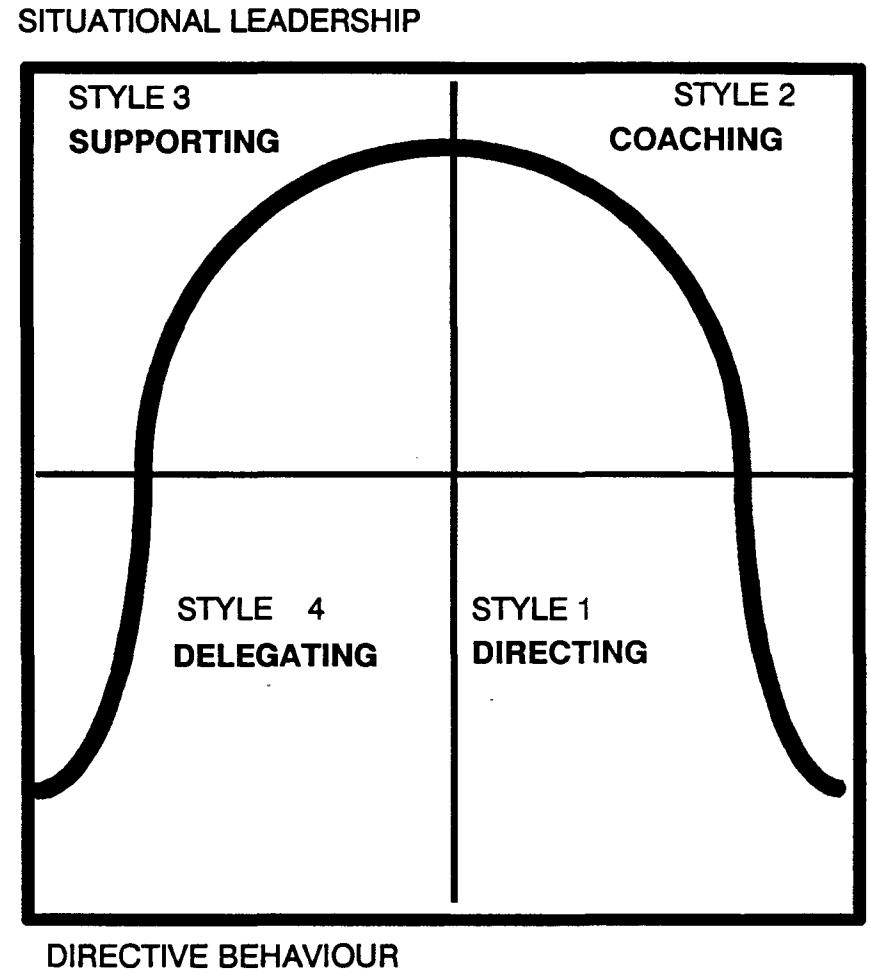
The D3 follower reponded best to the highly supportive but non- directive leader (S3 style). This style gave the follower the support and encouragement he needed while allowing the follower to do the job himself.

Development Level 4 - The Conscious Competent

We call the D4 the conscious competent because he is good at the task and is aware of why he is good. This allows him to critique and evaluate his own performance and through the feedback thus obtained get even better.

A D4 follower is willing, able and delighted to take responsibility. They excel at the task and love to do it. The leaders who were effective at managing this group were those who gave them the responsibility and then gave them the freedom they needed to do the job effectively.

Fig. 3 Situational Leadership



A Developmental Theory

The Situational Theory of leadership is thus a prescriptive theory. It is summarized in the diagram entitled Situational Leadership. The diagram indicates how leadership style is matched to the follower's developmental level. The theory thus allows the leader to provide the follower with what he needs. If he requires direction, the theory prescribes a directive style (S1 or S2) of leadership. If he requires support, the theory prescribes a supportive style of leadership.

The theory says then, that there is no one best leadership style.

It claims that effective leaders are able to adapt their style to fit the situation.

The theory of Situational Leadership is developmental and positive theory of leadership. It says that it is the manager's job to help their followers progress to a D4 level. Attaining a D4 level is not only good for them but it is also good for the leader because his time is then freed up to manage the other parts of his job. S1 is too time consuming to use all the time. Therefore, the leader's goal should be to help followers increase their willingness and ability to independently accomplish the tasks assigned to them, so that gradually you can begin to use less time-consuming styles (S3 and S4) and still get high quality results.

Managers have two choices: to hire people who are already D4's or to train people to become D4's. Most managers working on projects supported by IDRC have difficulty finding D4's because of the nature of the project environment and the developmental nature of their work. Therefore, it is essential that they accept the training function that is a vital part of their jobs. If they do not they will be continually frustrated with people who are not performing well.

This frustration often forces managers into the most commonly used leadership style which we refer to as *"leave alone and then confront."*

They hire someone to do a certain job; tell them what to do (S1); and they leave them alone (S4) assuming good performance will follow. Unless that person is a real winner (already a D4) that assumption will be false. When the inevitable poor performance follows the frustrated manager moves quickly to a S1 style and demands to know why things are not getting done - the *"confrontation"*

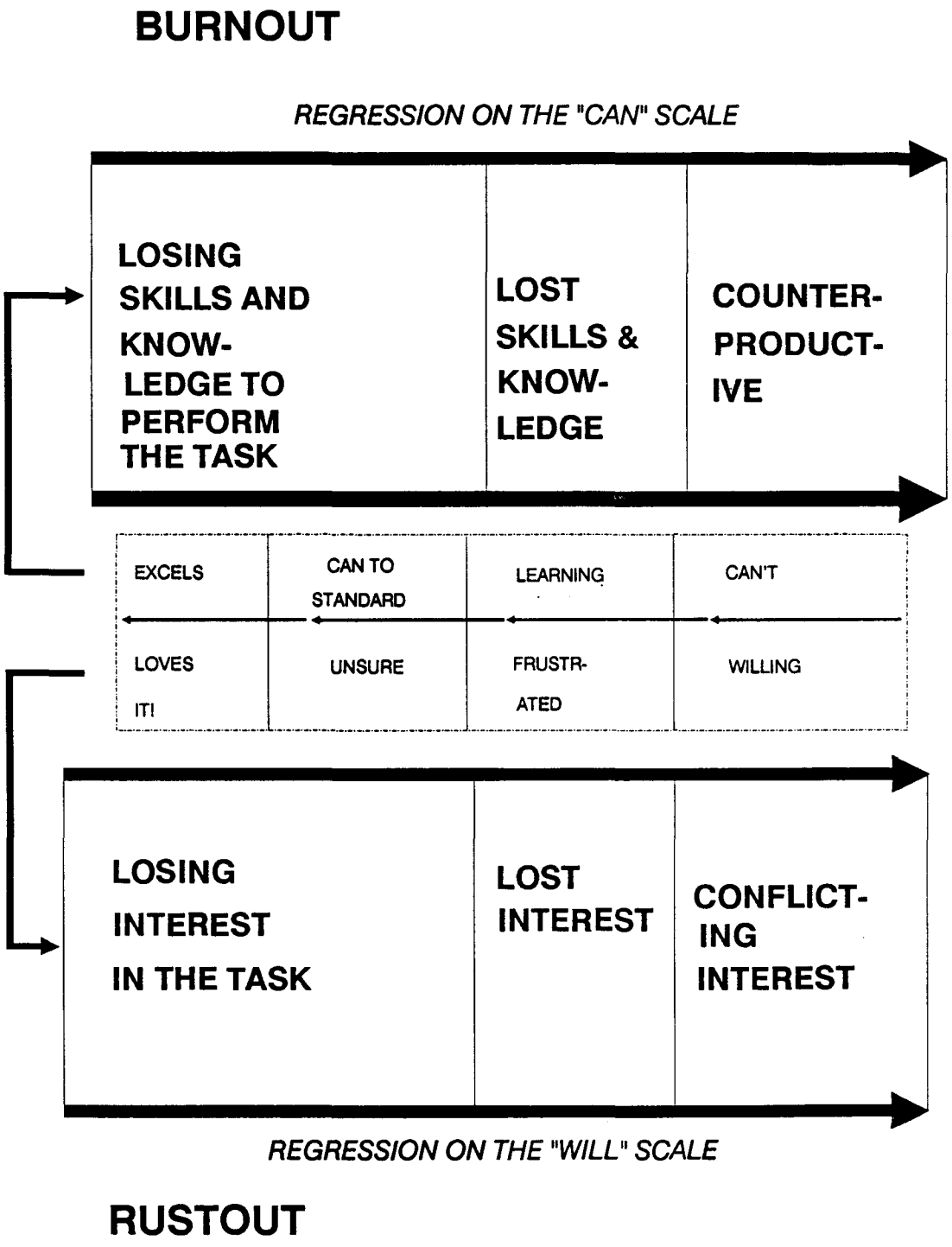
The leader's job can be summarized by the following statement:

"One of the principal tasks of a leader is to lead in such a way that over time every follower becomes a four in every part of their job."

Regression

The leader is usually challenged to develop his followers to become D4's. But the challenge does not stop there. Once there, the followers must be managed in a way that keeps them performing at a high level. Notice that the regression scale makes provision for regression once the follower arrives at development level four. Actually, regression can occur at any level but it is most likely to occur after an employee has passed through the learning curve and is no longer motivated by the acquisition of new skills. The follower's interest wanes or is transferred to some other activity which may, in fact,

Fig. 4 Regression



interfere with performance. For high stress occupations stress and *"burn-out"* is another cause of regression.

Regression usually occurs on the *"motivation"* scale. It is less likely that regression will occur in the *"skill"* area unless the follower has not practiced the skill or there has been mental or physical deterioration.

Dealing with Regression

When regression occurs, the leader is advised to move back through the four leadership styles starting from S4 and moving to S3. Thus the leader adopts a highly supportive, listening style that permits the follower to talk about his or her loss of interest or skill in a way that puts the onus on the follower to take some corrective action.

If this style change does not produce corrective action and performance declines further, situational leadership prescribes that the leader to drop another style (to Style 2). Now the leader tries to deal with the problem by continuing the supportive behaviour but also becoming quite directive in terms of what has to be done to solve the problem. If a Style 2 solution fails then the leader has no alternative but to drop one more style to a Style 1 and take charge of the situation by *"telling"* the follower exactly what has to be done to return to normal.

Training Winners

To avoid the ill effects of the *"leave alone and then confront" style of management and to insure productive and satisfied employees, managers should use Situational Leadership to move through the following five steps.*

1. **Tell** the person what you want them to do. You can't manage unless the followers understand exactly what is to be done, what their responsibilities are and what they are accountable for.

2. **Show** the person what you want them to do. Once people know what their responsibilities are, they need to know what good performance looks like.

Note, show and tell are both directive behaviours. Thus, training D1 or D2 starts with a S1 *"telling"* style. Since the follower does not know how to perform the desired task without direction and supervision, decision making and problem-solving are controlled by the leader.

3. **Let them try.** Once the person knows what to do and the expected level of performance, now the manager must take a risk and let them try to perform on their own. When you do that you are cutting back on directive behaviours - you are turning over responsibility for doing the task to the follower. The risk is that the follower might fail so you don't want to turn over too much responsibility too soon. Your job is to make the risk reasonable. Let the person try the new skills in a relatively safe situation.

4.**Observe performance.** When you let a follower try to do something, do not go to a *"delegating"* Style 4 and leave them alone. After you let the person try to do what you want them to do, stick around and observe performance. A basic component of a telling S1 style is close supervision - which means frequently monitoring performance.

5. **Managing the Consequence.** The main reason to closely supervise or monitor the per-

formance is to manage the consequences. A consequence is merely anything that follows behaviour. There are three basic consequences.

a. A **positive** consequence or reinforcer - anything that follows performance that tends to increase the probability of that behavior occurring again i.e. praise or a promotion.

b. A **negative** consequence or punisher - anything that follows performance that tends to decrease the probability of that behaviour occurring again i.e. a reprimand or demotion.

c. A **neutral** consequence or no response. Unless a person is doing something that is intrinsically valuable, (they would do it regardless of feedback from others) no response to good performance will gradually decrease the frequency of the behaviour occuring again.

The consequence that tends to increase the probability that a certain behaviour will occur again is a positive consequence. Thus the key to developing people is to catch them doing something right and reinforce them for it. Most managers do the opposite - they try to catch their employees doing something wrong.

You also need to remember that in the beginning it is often enough to catch them doing something approximately right. That way you have the opportunity to reinforce them for improvement or movement toward the goal. Exactly right is made up of a whole series of approximately right steps.

When the manager notices the follower doing something approximately right, he should immediately recognize it with supportive behaviour. This reduction in directive and increase in supportive behaviour should continue until the follower reaches D2. As the person moves to D3 and D4 the manager should begin to decrease not only directive behaviour but supportive behaviour as well.

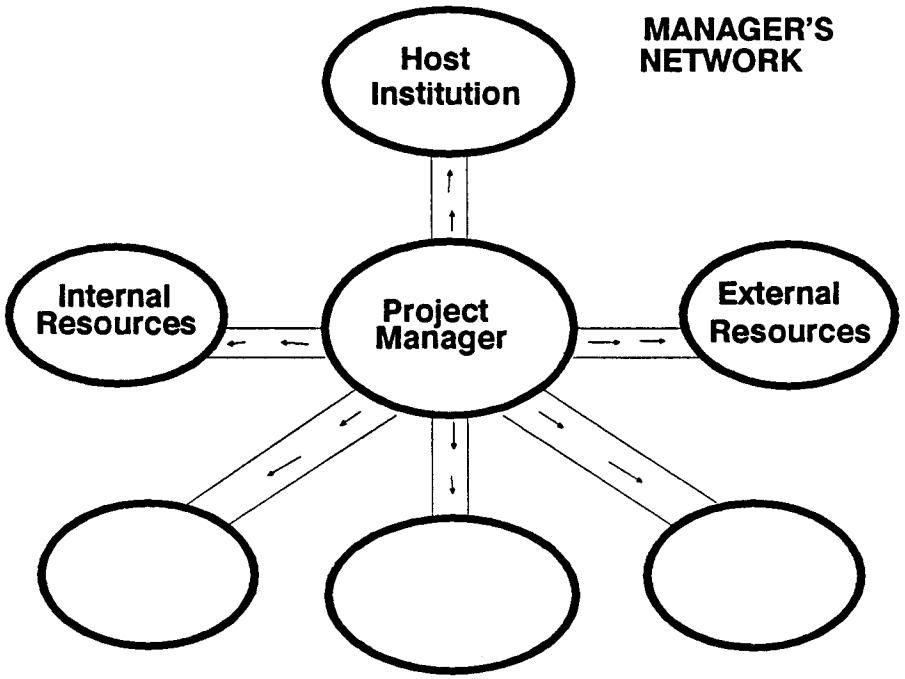
On the other hand, if you continue to direct and closely supervise people for long periods of time, you are sending the message that you do not have confidence in your own people. This underlying message will have a negative effect on the project culture and will affect performance. Thus, the developmental aspect of Situational Leadership and the need to gradually shift from external control of direction and support to internal control is crucial for developing and increasing the performance capacity of people.

The Project Manager and the Organization

Management is defined as planning, organizing, directing and controlling resources in order to accomplish a project objective.

This traditional view of management has managers operating only through 90 degrees (the manager interacting with subordinates) when, in fact, the manager of an IDRC supported project must operate throughout 360 degrees as illustrated in Figure 1 below.

Fig. 1 Manager's Network



Managing Around

The concept of the Management Network helps us to realize that project management is much more than *"managing down."* It also involves managing *"upward"* - managing the relationship you have with your boss; managing *"across"* the organization - managing relationships with peers, suppliers, users, resource people, beneficiaries etc. Managing is not only down, it is up, across and out. In short managing is all around.

The Project Manager and the Network

The project manager is in the middle of the network and project management involves managing 360 degrees around that network. It involves managing not only his subordinates but also the boss, internal resources and external resources.

All the networks throughout the organization are the same except the one at the very top which has no internal peers and the one at the very bottom which has no subordinates.

This means the study of project management must start with the network - the project manager's network and its nucleus - namely the project manager himself. It is the project manager's network which defines his relationship with the host institution external beneficiaries, donors and resources.

The Executive Team

Above the project manager is the executive team one member of which is the boss. This makes it essential that the project manager learn how to manage upward. This process is significantly different than managing downward. The source of influence no longer comes from the *"position"* but must come from skill, knowledge and personality.

The project manager's boss is the most important person on the network. The project manager must keep everyone happy and to do so we advocate that the golden rule of management be followed - *"Those who have the gold make the rules."*

The key skill for doing this is to prove to your boss that you are competent and highly motivated. If your boss is anxious about you and your abilities he will supervise you very closely. To earn your freedom, you must prove your competence. To do this you should be visible and available to talk whenever required.

Whenever you have a conversation with your boss your objective is to protect your team and enhance their image within the organization. The more positive the image of the project team, the more freedom they will earn to carry on with the project in the way that *"they"* think is best. A project manager who has a less than positive image will probably be forced to manage the project the way the *"boss"* thinks is best. This could be very frustrating especially since the boss will make as many mistakes as the manager would.

The Inside Resource Team

No project manager is an island. Each requires a support team to get the job done. Each manager requires administrative support, functional support, advice, knowledge, and resources.

Outside of the host institution the system is a competitive one. Support, services and other resources that are required can be purchased.

But inside the institution the project manager is forced to work in a monopolistic system. The Inside Resource Team - the accountants, the secretarial pool, personnel department, publication services - these are the people with the power. They have the power to either make your project a success or force it to fail. The project manager is trapped, and must obtain service from these people or not receive service at all.

Not only does the Inside Resource Team have the power, they are usually under-capitalized and under-staffed. Most institutions prefer to put their money toward projects and not toward administrative services.

Because of this situation, the Inside Resource Team is overworked and does not have nearly enough time to handle all the demands that are placed on them. So they give up trying to keep all the project managers happy and instead merely try to get through their day.

In order to manage the demand for their services, which always exceeds supply, the Inside Resource Team develops a queuing system by creating rules and regulations. When the project manager wants something the secretary or accountant or personnel director will say *"put it in writing,"* or *"use the proper form,"* or *"you've got the wrong authorization number."* Rules and regulations thus become a source of frustration for the project manager but a life saver for the Inside Resource Team.

Considering that the Inside Resource Team is usually under-staffed and have a monopoly on the services that they offer, the odds are slim that they will come through when the project manager wants them to.

Once again the project manager requires a new set of management skills to manage *"across"* the organization. He has no direct, formal organizational relationship with these people and he is therefore forced to manage not from position power but by exerting influence.

The Outside Resource Team

The project manager also depends a great deal on resources outside the host institution. He depends on the IDRC program officer, the user/beneficiary, other donors, outside suppliers, experts, government officials, local politicians, as well as international organizations such as UNESCO, WHO, FAO, etc.

Each of these resources has a lot of power because they have something (resources) that the project manager requires to be successful.

Your Make or Break List

The project manager cannot get anything done without the support and co-operation of his subordinates, his boss, the Inside Resource Team and the External Resources.

Imagine for a moment all the people on the project manager's network getting together for a meeting. The purpose of the meeting is to get the manager fired - to make him look bad!

The manager cannot get anything done without their support and when that support is withdrawn the manager would be rendered virtually helpless. When nothing happens on the project or when things start going wrong, who is blamed? The people on the manager's network? No, the person who is blamed is the manager himself.

On the other hand, what if these people wanted to make the manager look like a superstar - could they? They could free up all that red tape, organize all the resources and assure that the project will be a success.

For the project manager then, management is getting things with the active support of others where *"others"* is not just subordinates but all the people on the network.

And who is it that the institution has hired to make sure the project manager gets the support of all the people on his network? The project manager himself. Top management has delegated that responsibility to the manager because he is the best person to handle that responsibility. The manager is the one who interfaces directly with all the people on the network. If there is trouble with some internal peers, the boss is not qualified to handle this situation because his/her network is removed from these people. Since it is the project manager's responsibility to get the active support of everybody in his/her network, he/she cannot expect help from his/her boss. Part of the the project manager's responsibility is to get and hold the active support of the people on his/her network so that he/she is able to accomplish project objectives.

Constructing the Network

First, write down the names of your immediate subordinates and your boss. Do this using the chart entitled "Supervisor/Manager's Network".

Second, try to identify your Internal Resource Team. Write down only those people who are in a position to make or break you in a key component of your job. The prospective candidate must have regular contact with you in order to qualify.

Third, identify the External Resource Team. Identify individuals not organizations.

This list that you have just completed consists of the names of the people whose support you must have when the pressure is on.

When you look over the list you may not be that happy. But don't be too hard on yourself because you had nothing to do with picking these people. If you had a choice probably half of them wouldn't be there. In our social life we have the opportunity to choose our friends and construct our own molecule. But, in our business life somebody else picks the network for us and then asks us to manage it.

A project manager who has the support of the members of his network is in a position to be effective. Since the manager's following is above (the boss), below (subordinates), beside (internal and external resource teams), the manager's leadership position is always from the middle of the network. The ineffective leader believes that management begins at the top and is exercised downward. The effective manager knows that managerial leadership begins at the centre of the network and is exercised 360 degrees around it.

Managing the Internal and External Resource Team

The network that you just constructed will help you to manage your time and increase your effectiveness. It will help you to identify the 20% of the people who you interact with who can really make or break you.

Calculated Neglect

Since the project manager is expected to get a lot done in a limited period of time, it is important to practice the skill of calculated neglect. For example, if somebody comes into your office to gossip, you have to decide whether or not to listen. Now that you have constructed your Make or Break List it's an easy decision. If the person is on your list, listen. If not, get on with your work as quickly as possible.

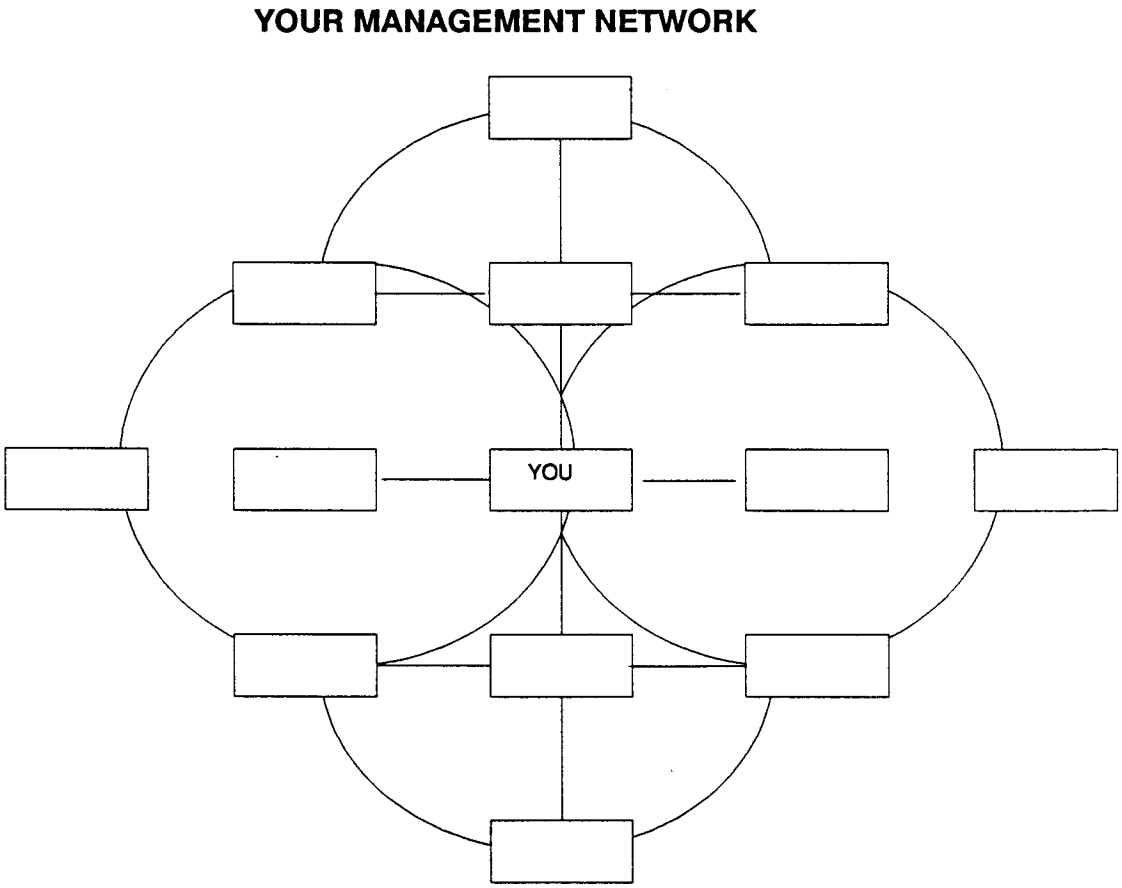
An Insurance Policy

The second principle to apply when managing across the organization is to build an insurance policy. Try to have a number of outstanding credits so that when you need a special favor you have people on your network who owe you something and are therefore motivated to help out. Building an insurance policy is really maintaining an effective exchange relationship. This involves trading knowledge, products, services, time, information, friendship or whatever for the services that you will need to keep your project on track.

Managing Up and Down

The focus of this reading has been on managing across the organization. The principles of managing up and down the organization are based on the theory of Situational Leadership presented in other parts of this manual.

Fig. 2 Supervisor/Manager's Network



Time Management

Time management is one of the most popular subjects in the management training curriculum. Our Survey of Management Training and Development Needs consistently results in this topic being included in the Top Ten list regardless of organization type or level in the hierarchy.

The popularity of time management is not hard to explain. Everyone these days is asked to do more and more with less and less. Time is the one resource that we think we can squeeze in order to extract a little more at the end of each day. Yet time is the only resource that we all have all we can ever get! There are 24 hours in every day for each one of us, no more and no less! None of us will ever get any more time than we already have but we all could probably use the time that we have more effectively.

The Time Management Survey

Answer the simple question below.

Circle the number that indicates how you feel about the statement. Note that you are not asked how well you manage your time but how you feel about it.

THE TIME MANAGEMENT SURVEY

" I AM SATISFIED WITH THE WAY I MANAGE MY TIME."

TOTALLY DISAGREE	1 2 3 4 5 6 7 8 9 10	IN COMPLETE AGREEMENT

How Effective Managers Really Spend their Time

As a follow-up to the question here is some information on how **effective** managers really do spend their time. This data was collected by direct observation of senior managers in both public and private organizations and will probably look familiar to many of you.

* 70% to 90% of their time is spent with other people both from within the organization and outside of it.
* In these encounters they discuss anything and everything - some of it work related, much of it is not.
* They ask questions by the score.
* They rarely make big decisions.
* They joke a lot.
* Much of what they do, they judge to be a waste of time!
* Time is allocated on a responsive basis, most of the day is unplanned, even at scheduled meetings they spend a lot of time on non-agenda items.
* Most of their time with others is on short, disjointed conversations. Rarely do they spend more than 10 minutes on a topic. They often cover ten topics in 5 minutes!
* They work an average of 60 hours a week.

Remember, these are people who are very effective in their jobs. None of them were satisfied with the way they managed their time! In other words there may be an inverse relationship between how well you feel about the way you manage your time and how well you are actually doing. Now, how do you feel about your survey results?

A similar survey of professional staff revealed that they spend less than half of their time at work on activities directly related to their work. The rest of it went to travel, clerical work, idle chit-chat, training, etc. Forty to sixty percent of their time was spent with others. Only 8% of their time was spent on conceptual work such as analyzing or problem-solving but few of them were aware of the way they spent their time. They all thought that they spent a lot more time than they were on problem-solving activities.

Most professionals were dissatisfied with the way they spent their time and would like to do something about it. They have tried most of the time management techniques without much success!

The Time Management Problem

Many hundreds of managers have been trained in time management programs almost all of them knew, before they came to the class, what they should do in order to improve the way they use their time. Managers **know** what to do, they just **won't** do it! No amount of new knowledge will cure a motivational problem. Time management seems to be a "Will" problem not a "Can" problem.

If you want to change the way you manage your time you have got to start doing what you already know you should do, or stop doing something you know you shouldn't. (Bearing in mind all of the time that you may already be as good as you can be!)

The ABC's of Time Management

A simple formula may help you understand why you are not managing your time the way you already know how to. We call it the ABC approach.

The A stands for the Antecedent. This is the event that immediately precedes the situation that you have difficulty with. Examples of antecedents are the:

* Pile of papers on your desk that you confront every morning when you arrive for work.
* Telephone call from an old friend that interrupts an urgent task.
* Ring on an alarm clock at 7:00 a.m.

The B represents the Behaviour. This is what you do or say when confronted with the antecedent. You might:

* Ignore the pile of papers and go for coffee.
* Engage in a long conversation with your friend in spite of the urgent task.
* Turn off the alarm, roll over and go back to sleep.

The C is the Consequence. This is what happens to you as a result of your behaviour. A consequence is positive, negative or neutral. For example:

* You may escape an unpleasant task.
* You may make a friend happy.
* You may catch up on your sleep.

Every situation has an A, and a B, followed by a C. Something happens, you respond. If the result is positive and you feel good about it, you will probably do the same thing the next time. If the result is negative and you feel bad about it, you won't. If the results are neutral, your next reaction could go either way. Most situations produce several consequences, some that feel good such as the the extra sleep you obtained when you were late for work and some bad such as the guilt that you feel when you finally do arrive. Because of this we talk about the "balance of consequences" as being mainly positive or mainly negative.

Why Do We Do What We Know We Shouldn't?

If you persist in a pattern of behaviour (B) whenever a particular antecedent (A) occurs then it is safe to say that **the Balance of Consequences lies in favour of your current pattern.** That is to say you are getting something good out of doing what you know you shouldn't be doing!!

For example, if every time you are confronted with urgent work you find yourself looking for something simple but less urgent to do, you must be getting some reward for this behaviour which outweighs the pain of getting further behind. What are some of these secret pleasures?

Dru Scott, the author of "How to Put More Time in Your Life" has identified these secret pleasures that we get from mis-managing our time. Some of them that she identified are as follows:

* The sense of power we feel when we arrive late.
* The excitement we feel when caught up in the last minute rush.
* The good feeling that we often experience when we break the rules.
* The enjoyment we feel being a martyr when we carry the load for the rest of the team.

* The self-satisfaction we feel when we never have to ask for help.
* The good feelings that we experience when we get the job done perfectly even when it is not crucial.
* The enjoyment we feel when we say "yes".
* The power we experience when we are able to keep all the information to ourselves.

Now try the worksheet entitled "Smoking out the Payoffs" which is designed to give you a moment to think about the secret pleasures you have been receiving from your time mismanagement.

Smoking out the Payoffs

Describe a specific and recurring time management problem that you want to solve.

Take the point of view that having this problem is exactly what should be happening to you right now given the "pains" and "pleasures" that you are experiencing. Now try to answer the following questions as honestly as you can.

How is this problem serving me? What benefits am I getting out of this problem being exactly the way it is?

What would be wrong if this problem were to suddenly clear up?

The Hidden Pains of Doing What the Experts Say

Not only are there pleasures associated with time mis-management but also there are pains associated with doing what the experts suggest.

First let us summarize what the experts do say. We have summarized the advice of a number of time management experts. If you see something on the list that you have never seen before, great! If not, don't be surprised. We already said that you probably already KNOW everything you need to know. Applying what you know is likely the real problem.

What the experts say.....

* Prepare a "To Do" list everyday - with priorities.
* Use a desk calendar to schedule your time.
* Keep a log of your time for a week - then reassign your time on the basis of priorities.
* Impose deadlines on yourself and others.
* Never handle a piece of paper more than once.
* Delegate tasks to followers (providing they have the competence and willingness to handle the task.)
* Never say "leave it to me" to a subordinate. This simply transfers his problem to you. Now you have to make the next move and therefore, have created a time management problem for yourself.
* Use "unless I hear memos". For example, write on the memo "unless I hear from you by Friday I will put through the transaction".
* Respond on the original letters. A note on the original letter saves a great deal of time writing and then typing the reply.
* Plan a quiet time everyday.
* Have someone screen your calls and visitors.
* Learn to say "no".
* Apply the 80\20 rule to your list of job responsibilities. This was discussed in a previous reading. The theory is that only 20% of your activities are responsible for 80% of your success. Therefore, good time management means having time for the key activities - those that have a major impact on your job.
* Finish a task - don't hop from task to task.
* Don't procrastinate.
* Practice calculated neglect. Calculated neglect is simply neglecting or ignoring some things that come across your desk. Once ignored these items often disappear completely. If they resurface in a day, week or month's time then they probably important enough to spend some time on them.
* Group like tasks and do them together.
* Break large jobs into manageable tasks.
* Build an insurance policy with those on your "make or break" list.
* Plan your work before you work your plan.
* Manage by exception. This principle helps you allocate your time to the trouble spots. For example if all the budget items are accounted for except one, the exception principle states that the manager should spend his time dealing with the problem item - with the exception.

There is **pain** associated with taking the expert's advise. Many of these pains are hidden but nevertheless real. If we did do everything the experts say we should we would probably

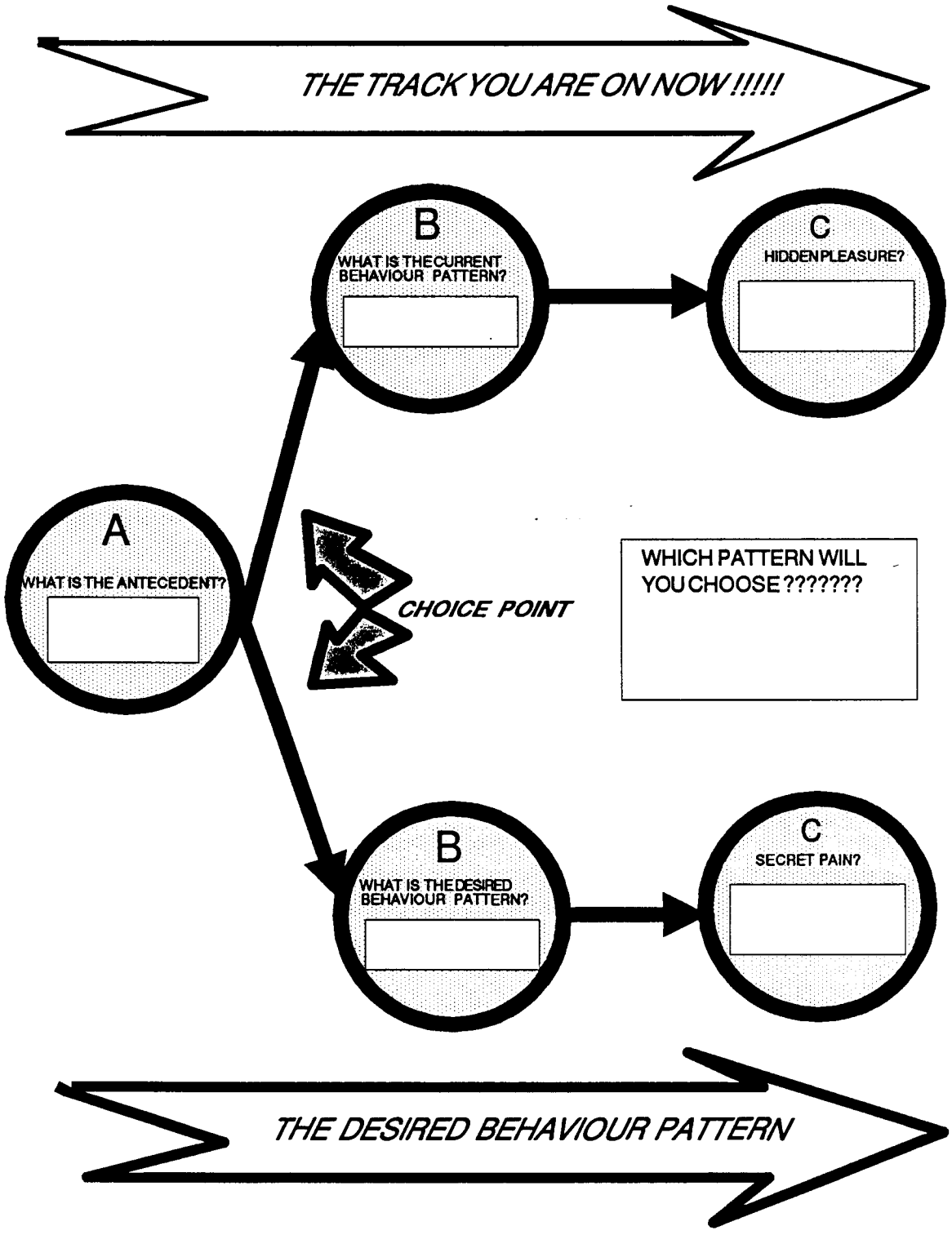
drive our friends and colleagues crazy and they, in turn, would regard us as being pretty dull.

What are some of the hidden pains associated with doing what the experts say? Again, you can probably add to our list from your own experience.

* You may hurt people you care about.
* You may have to face some unpleasant tasks.
* You may have to face some changes in your life.
* You may have to accept more responsibility.
* You may have no more excuses.
* You may feel guilty about not working late every night.
* You may not get to do what you like to do.
* You may not see the people you want to see.
* You may not get to do everything perfectly.
* You may have to ask for help.
* You may have to spend more time with your family.
* You may have to give up some power.
* You may not get to be the "expert".
* You may have to share your knowledge.
* You may have to say "no".
* You may be looked upon as "straight".
* You may get all the difficult tasks.
* You may get promoted to a job you don't want.
* You may lose your "absent minded professor" image.
* You may not get to carry the burdens of the world around with you.
* You may not look busy.
* You may not get as much attention.

Do you recognize any of these hidden pains? Some probably hit very close to home and may leave us with an uncomfortable feeling. On the other hand, ignoring these hidden pains will prevent us from improving the way we manage our time.

THE "ABC'S" OF TIME MANAGEMENT



To Improve, Change the Balance of Consequences

If you really want to change the way that you manage certain situations do a thorough ABC analysis. Find out why you are staying on the track that you are now on and why you are avoiding the one you know you should be following. What are the secret pleasures? the hidden pains? What would you have to do to shift the balance of consequences in favour of the track that you want to be on? In other words...

How do you make what you should be doing more pleasurable or how do you make what you are doing now less attractive?

This is a tough assignment and most of us need help to make a significant shift. It often requires enlisting the help of family, friends, colleagues or the "boss".

Use the Balance of Consequences worksheet to follow the following procedure.

1. Clearly identify the behaviour that is associated with the time management problem. Then, identify the behaviour that would be observable if the problem were solved.

2. Start by increasing the positive consequences that would accrue to you if the new desired behaviour is performed. This may require that you enlist the help of a friend or colleague to administer a reward whenever you successfully do what you know you should do.

3. Next, try to eliminate the positive consequences that accrue to you whenever you persist in following the old pattern. This involves getting in touch with your "secret pleasures" and trying to eliminate them. Again this may require the co-operation of a friend or colleague.

4. Eliminate the negative consequences that are associated with your new behaviour. This involves trying to eliminate or reduce the influence of those "hidden pains".

5. Finally, as a last resort, increase the negative consequences that accrue to you when you persist in following the old behaviour pattern.

By using this approach with a colleague and friend, this writer was able to shift from a pattern of little or no physical exercise to a regular one hour exercise sessions, three times weekly!

Balance of Consequences

Analysis Worksheet

Description of the Desired Behaviour	**Description of the Undesired Behaviour**

Negative Consequences	Negative Consequences
Positive Consequences	Positive Consequences

Back to the ABC's

A, remember was the antecedent. It preceded the behaviour. B was the behaviour itself and, C was the consequence or what happened as a result of your behaviour.

The theories of Albert Ellis allow us to look at this model again from another perspective.

If brief, Ellis asserts that people do not have a direct reaction to most situations, but rather, they think first. Ellis believes that people's reactions are caused by their assumptions, evaluations and interpretations of the situations. In other words, people will respond based upon their beliefs about the situation.

Let's illustrate what Ellis is talking about with the following example.

The Director unexpectedly announces that a report that was due next week is now urgently required tomorrow.

Three managers involved in the project respond:

Manager 1 says: "What a disaster this is going to be! I don't think that we can handle it. On top of everything else that's expected of us this is ridiculous!"

Manager 2 says: "This is really nothing to get upset about - Why don't we spend a few minutes right now thinking about how we can respond."

Manager 3 says: "The Director obviously has a real problem on his hands and we have a unique opportunity to help him solve it. I think that we can offer some insight if we figure out how we can use our time to the best advantage."

In the situation above "A" was the new deadline. The three managers each reacted to the "A" differently. One reacted positively, one negatively and one had a neutral response.

It wasn't the "A" that caused the reactions. How could it? There was only one "A" and three different reactions. If "A" was triggering the reactions all three would have had a similar response.

If the event is not responsible for the manager's reactions, then what is? The answer is "B" of the manager's belief about the event.

What Messages did You Learn about Time?

1. Being on time? Being late?

2. Giving it your best effort.

3. Not finishing on time?

4. Being the first to arrive? Being the last to arrive?

5. Knowing when to leave?

6. Not having enough time?

7. Being busy?

8. Being independent? Doing it yourself?

9. Taking time to do things right?

Beliefs

Manager 1's belief had to do with survival. Manager 2 was neutral toward the event and Manager 3 saw it as an opportunity.

Do you think the way the manager felt about the event had anything to do with the effectiveness of the Behaviour (Performance)? You bet it will - the belief will have a great deal to do with how the managers perform on the job.

Manager 1 unfortunately averted to a "survival mode". We all do it, we all have a propensity to be concerned about four needs and fears. Some of us more so than others but we all have a propensity to one or more of the following:

Needs	Beliefs
1. To be right	1. Of being wrong
2. To win/succeed	2. Of losing/failing
3. To be liked	3. Of being rejected
4. To be comfortable	4. Of being uncomfortable

These four needs and fears that we all revert to at times are expressed in four irrational beliefs.

1. I must always be right. I must never be wrong.

2. Everybody should like me. No one should ever reject me.

3. I must always win. I must never lose.

4. No one should ever hurt me. Others will always take care of me.

In time management, these irrational beliefs are often operationalized in our subconscious by what we call the Five Drivers. These Drivers are responsible for most of our compulsive use of time and contribute to our inefficiency.

The Five Drivers

Much of our compulsive behaviour can be traced back to messages that we received at a very young age from authority figures in our life. When we are faced with uncertainty, anxiety and stress as adults these messages take over our thought patterns and begin to govern our behaviour.

The five drivers are explained below. For most of us one or two of these drivers will be a significant force in our lives.

The five basic drivers: a self-assessment

READ THE DESCRIPTION OF THE FIVE DRIVERS ON THE NEXT PAGE. USING THE SCALES BELOW, ASSESS THE DEGREE TO WHICH EACH OF THE DRIVERS AFFECTS THE WAY YOU MANAGE OR MISMANAGE YOUR TIME

	not at all				to a great extent
BE PERFECT	1	2	3	4	5
TRY HARDER	1	2	3	4	5
PLEASE ME	1	2	3	4	5
BE STRONG	1	2	3	4	5
HURRY UP	1	2	3	4	5

Driver 1: Be Perfect

Many of us were told as children that "any job worth doing was worth doing well". This is a useful message but if pushed to an extreme by a parent who always insists on perfection it can become a dysfunctional driver pushing you toward compulsive "be perfect" behaviour. Some jobs do not require perfection, but the perfectionist takes time (or wastes time) to do even the trivial perfectly.

Driver 2: Try Harder

"It doesn't matter how well you do as long as you do your best." Sound familiar? Again, good advice, but if it is carried to the extreme it results in a person compulsively carrying the burden of the world on his shoulders. The "try harders" never stop trying hard. They take on extra loads, work late every night, take work home, sigh, moan and generally suffer for the rest of us. They often do not have time for lunch, holidays, fun or anything that takes away from trying hard.

If you work with a suspected "Try Harder", test them by offering to take some of the work off their shoulders. If your diagnosis has been correct, you won't be able to pry the work away.

Driver 3: Please Me

Some parents manage to give their children the message that the most important thing in life is pleasing others, especially those who have power and whose love and respect is desired. Victims of "Please Me" have time management problems when faced with a dilemma where pleasing one person could mean displeasing another.

Example - "Please Me" is standing over the desk waiting for an important telephone call when a call comes through from his wife who wants to talk about an important issue at home. For many of us this would not be a problem, but for "Please Me" this can be pure hell!

Driver 4: Be Strong

Self reliance is the message that has been programmed into those with a "Be Strong" driver. These are the people who believe that "if you want to get anything done right, do it yourself". Again, not a bad message but pushed to an extreme it leads to countless hours of wasted time that could be easily saved by simply asking for help.

Driver 5: Hurry Up

Some parents are always urging their children to: "Hurry up, get in the car. Hurry up, we're late. Hurry up, we will be late for the movie. Hurry up, Hurry up". People who have been programmed this way will often fly into a scramble of activity whenever a crises occurs. Most of their energy and activity is misdirected and dysfunctional. They consume countless man-hours of activity by hurrying around themselves and by constantly urging others to do the same.

Which one of the five Drivers is most responsible for your compulsive use of time? Complete the survey on the next page and see if you can make any conclusions about your own behaviour.

Pick the Techniques that Work for Your Style

The time management experts have identified hundreds of techniques but most people need to use only a few. But those few must be right for their individual style. Some techniques on this list can help reduce one compulsive time use; others, two; and some all five. Which ones will work for you?

BP = Be Perfect; BS = Be Strong; HU = Hurry Up; PM = Please Me; TH = Try Hard.

	BP	BS	HU	PM	TU	
1.	Do your most important priorities, your central concerns first.	—	—	—	—	—
2.	Get help when it is more effective rather than believing you always have to carry the entire burden by yourself.	—	—	—	—	—
3.	Communicate directly with others about your objectives and what you want.	—	—	—	—	—
4.	Give yourself time for creative thinking everyday.	—	—	—	—	—
5.	Avoid perfectionism on things that don't really matter.	—	—	—	—	—
6.	Handle papers only once or at least take some action each time you touch a paper.	—	—	—	—	—
7.	Clarify what you want to accomplish before picking how to accomplish it.	—	—	—	—	—
8.	Discover what is vital and trivial in accomplishing what you want.	—	—	—	—	—
9.	Ask yourself frequently, "What will happen if I don't do this?"	—	—	—	—	—
10.	Set realistic deadlines for yourself and others.	—	—	—	—	—
11.	Concentrate on doing one thing at a time.	—	—	—	—	—
12.	Use a written action list every day.	—	—	—	—	—
13.	List your action items in order of importance.	—	—	—	—	—
14.	Estimate how much time projects are worth.	—	—	—	—	—
15.	Give the right kind of time to the right things such as carving out blocks of time for creative planning and big projects.	—	—	—	—	—
16.	Make plans that include time for unexpected emergencies.	—	—	—	—	—
17.	Have planned and practiced ways of ending unwanted interruptions.	—	—	—	—	—
18.	Group related activities such as telephoning or writing.	—	—	—	—	—
19.	Divide big projects into smaller, more manageable steps.	—	—	—	—	—
20.	Keep in mind the time you need to leave for appointments rather than the time you need to be there.	—	—	—	—	—
21.	Read books and magazines using headings as summaries and as signs of materials to read in detail rather than attempting to read everything word for word.	—	—	—	—	—
22.	Use gadgets to help multiply your time.	—	—	—	—	—
23.	Use a calendar that is the right size, shape, and design for your needs.	—	—	—	—	—
24.	Ask yourself frequently, "Who else can help me accomplish this?"	—	—	—	—	—
25.	Do something every day toward your long term accomplishments and lifestyle.	—	—	—	—	—
26.	Build in and give yourself rewards for using your time well.	—	—	—	—	—

The Good News About Beliefs

Each one of our Drivers exist because of our belief system. Our Drivers and the resulting compulsive behaviour are simply manifestations of our belief system. There are three characteristics of this belief system that are important.

1. Beliefs are learned.
   Most of our beliefs were learned at a very early age. They are the product of our environment, our parents, our education, etc.

2. Some of the beliefs that we have are irrational and are not helping us manage our time or our life.
   We have already seen that most of us have a propensity toward one or more of the four irrational beliefs. Perhaps we have not bothered to sort out our belief system before.

3. Beliefs can be changed.
   This is the good news about beliefs. Because they are learned, irrational beliefs can be unlearned and substituted with more rational ones.

Self-Talk

Our beliefs are activated or operationalized by the way that we think. We think by talking to ourselves. We call this our self-talk.

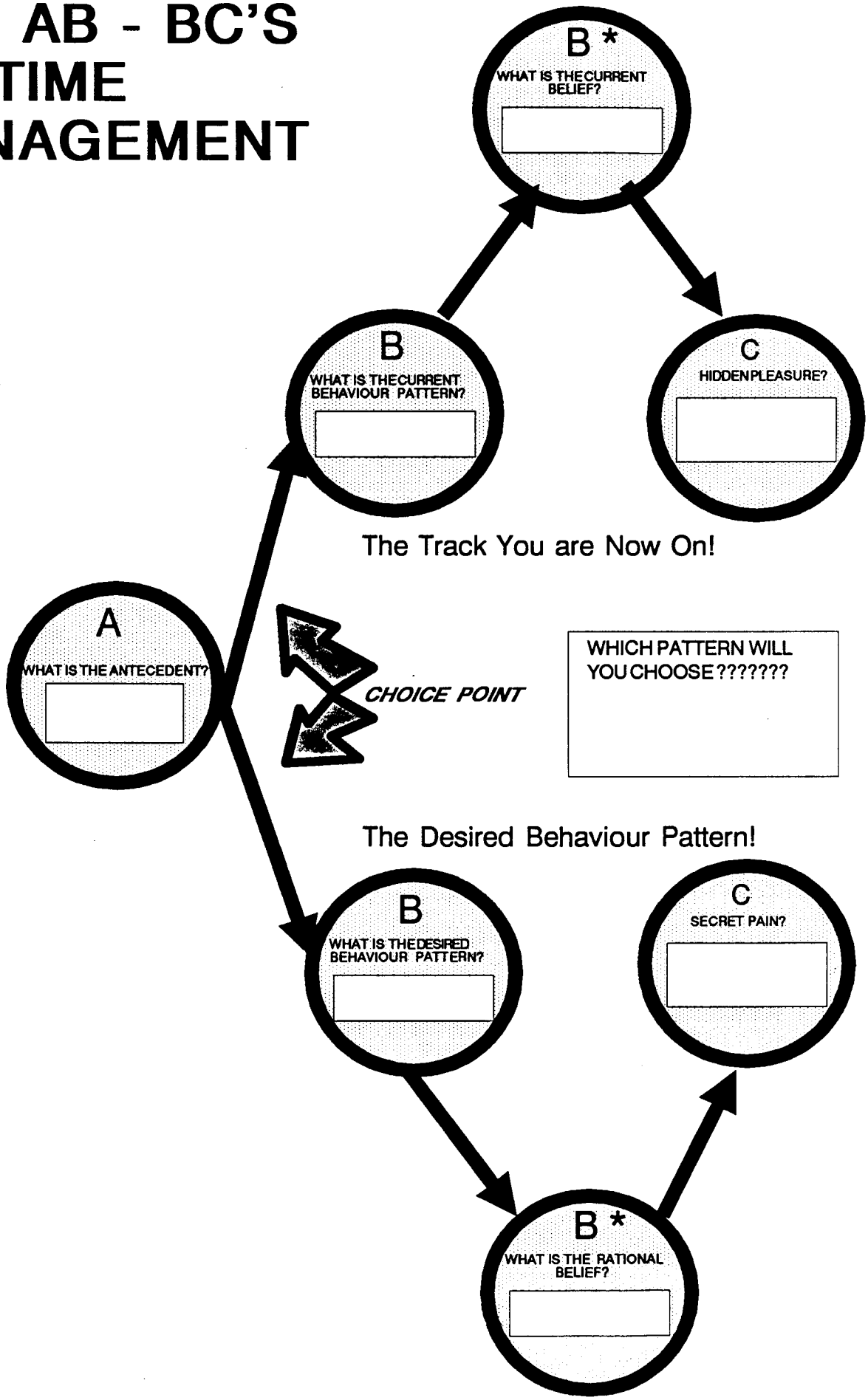
If we want to change our behaviour we have to change our beliefs. We can do that by changing our self-talk. Our present self-talk represents our thoughts about an event - thoughts that reflect our learned and accepted beliefs about the way the world "should" be. But these thoughts are not always helpful and very often they are not rational.

Fortunately we can change the way we talk to ourselves. We can catch ourselves when one of our Drivers is "talking us into compulsive behaviour". We can change this irrational self-talk with beliefs that are more in line with our best interests. For example:

Old Self Talk	New Self-Talk
"A for Effort"	"A for Results"
"I must get it completed on time."	"I'll do what I can and what is possible to get it completed on time."
"They should know They shouldn't interrupt me like that."	"I would prefer that better. they act differently."
"I have to stay busy."	"I have to be sure that what I do contributes to results."

Notice that such alternative self-talk can lead to feelings of acceptance, as opposed to the helpless or angry feelings brought on by the irrational self-talk and resulting compulsive time use. Certainly the new self-talk is more likely to lead to problem-solving behaviour and improved usage of time. The self-talk that serves our best interests is almost always self-talk that reflects reality (fact, as opposed to opinion). Here are some reality statements to consider.

THE AB - BC'S OF TIME MANAGEMENT



Replacing the 5 Drivers

In the space below, replace each of the 5 Drivers with a more rational belief about how we should use our time.

Irrational Belief	Rational Belief
1. Be Perfect "Everything I do must be perfect."	
2. Try Harder "The harder you try the more successful you'll be...."	
3. Please Me "It's important to make him or her happy.	
4. Be Strong "To get it done right I have to do it myself."	
5. Hurry up "Activity is what's important. If you want something done get right to it."	

Reality Statements

1. Outside events (ie. interruptions, telephone calls etc.) that cause time management problems for us **will occur.**

2. We have little or no control over these events but our thinking and behaviour can sometimes influence them.

3. We decide how we use our time.

4. We decide how many commitments we will make and how many we will meet.

5. We decide whether on not we will manage our time.

6. It is usually more beneficial to ourselves and others if we decide to be honest about how much time we have and how we want to use it.

Self Talk Exercise

1. Describe an event, a person, a job or a personal habit that represents a time management problem for you.

2. How does this make you feel? What are the consequences of this time management problem for you?	4. How do you want to feel about this situation?
3. What is your irrational self-talk?	5. What self-talk will you have to use in order to feel the way you want to feel?

The Self-talk worksheet is designed to help you become more aware of your self-talk, and to give you more practice developing alternatives to the messages relayed by the five drivers which lead us to non-productive time use.

The goal of the exercise is to identify the self-talk that leads us to compulsive use of time. Note that this process is really about making a choice about what you believe. You can use this process to identify your self-talk and come up with new, more useful alternatives.

Visualizing the New Self-Talk

Replacing the irrational self-talk with more rational self-talk is just the first step in helping ourselves to control our compulsive use of time.

The second step involves practicing and learning the new self-talk until it becomes our habitual automatic reaction. The question is how can we **absorb** alternative self-talk so that it becomes as automatic as the 5 Drivers.

Fortunately, there is an excellent technique for doing that. The technique depends upon using our ability to imagine or **visualize** ourselves in situations and then mentally practicing our new self-talk. The positive effects of using visualization to practice and improve behaviour have long been known. One of the first experiments consisted of two groups of basketball players who wanted to improve the accuracy of their foul shots. One group actually practiced with a ball and basket. The other simply sat in chairs - in the locker room - closed their eyes and imagined themselves taking foul shots, mentally correcting misses. The results were amazing. Both groups improved, by the same amount proving the power of visualization.

The same technique can be used to help yourself prepare to apply alternative self-talk in your own real-life situations. Once you have worked through a time management problem caused by one of the 5 Drivers, and have developed alternative self-talk, do the following:

1. Get comfortable and calm by closing your eyes and taking several slow deep breaths.

2. Visualize the situation which is causing the time management problem.

3. Now visualize yourself managing the situation and using alternative self-talk.

Here are some examples of self-talk that may be useful in dealing with day-to-day situations on the job.

* "No one except myself can dictate how I will use my time."
* "Other people cannot make me upset or frustrated or out of control. I can remain calm and use my skills to manage my time in spite of what is going on around me."
* "Is this activity helping me? Do I really want to be doing this? What should I be doing that will help me accomplish my objectives?"
* "Should I be doing this by myself? Is there anybody else that I should get involved? Is there anybody else who can do this job better and faster than me?"
* "I'm human and humans sometimes make mistakes. What can I learn from my mistakes so that I can improve my performance?"

Practice makes perfect. In this case practice can make your new self-talk become your normal way of operating. It can help you get hold of your time management problems and improve your effectiveness.

Helping Others to Change

When trying to help someone else manage their time take into consideration what might be driving their behaviour. Simply demanding that they change may not be enough. The current behaviour pattern may be deeply rooted and internally rewarding.

The ABC approach is just as useful with somebody else's behaviour as it is for your own.

1. Help them identify the ABC's that explain and relate to the track that they are now on.

2. Help them identify a more desirable response to the Antecedent.

3. Help them to conduct a Balance of Consequences which is designed to increase the incentives for doing what they should be doing (pleasures) and reduce the incentives (pains) for following their original behaviour pattern.

4. Administer the rewards they value whenever the more desirable behaviour occurs.

5. Gradually reduce the dependency that the other person has for you and the rewards that you are administering so that they can enjoy the new behaviour for its own sake.

6. Help them identify the Driver that is responsible for their compulsive behaviour and replace the irrational self-talk with more productive self-talk.

Schedule Blocking

Schedule Blocking is a way of building your daily schedule using the "experts" advice in a practical way. The principles are designed to help you overcome the most common errors people make when they begin to schedule their time.

1. They start with the task rather than the time.

Building an effective personal schedule demands that you first find out how you are presently spending your time. Once that analysis is done, you can then compare how you **do** spend your time against how you **should** spend your time. Without this analysis the tendency is to simply repeat your mistakes.

Determining how you spend your time requires that you keep a personal log book similar to the Time Record included in this package. This is a difficult and tedious task. However, it is a valuable exercise since most people who analyze the results are surprised at where their time goes. The results are very often different from where they would like their time to be spent.

In our time management seminars we find it very difficult to get participants to fill out a Time Record. Why is this so? It is because of the ABC's. It is a difficult task and when the exercise has been completed the manager has nothing to look forward to but bad news - news about how she is wasting her time.

2. They over-schedule themselves.

The idea should be to build a schedule which is easy to keep. The most common mistake is to schedule every minute of the day and then, in the inevitable frustration that comes from your inability to keep this schedule, completely abandon it and go back to operating without a schedule.

Most managers must start with at least 50% of their day unscheduled. Trying to schedule more will result in a schedule that is impossible to follow.

Following is a series of worksheets designed to take you through the Schedule Blocking process. The step-by-step process is described on the following page.

3. They are too hard on themselves

Very often, when people begin to build a schedule they schedule difficult task after difficult task. No wonder these same people later abandon the schedule saying "life's more fun without it".

Dr. David Premack recommends building your own personal reward system into your schedule. Whenever you complete a difficult task, reward yourself by doing something that you like to do or is fun to do. This lightens you load and helps you get through the day.

4. They schedule too many events.

Most time management experts recommend dealing with "blocks" of time rather than a little here and a little there. Scheduling blocks of time (schedule blocking) allows one to concentrate on one task long enough to finish it or at least make progress on one chunk of the work.

5. They are not sensitive to their personal energy pattern.

Some of us are morning people and some of us are afternoon or evening people. By this we mean that each of us has our time of the day that is our "prime" time. Similarly, each of us has that part of the day when we experience an energy sag. Shrewd managers protect their prime time for those important tasks that have a great influence on results. They also try to schedule tasks that they like and which give them energy for those "down" times. Refer to the Biological Prime Time Worksheet and spend some time figuring out how a typical day goes for you. Do you have any ideas how you can protect your prime time and give yourself a boost during your down periods?

The Schedule Blocking Process

The following worksheets will allow you to schedule your time using the principles of Schedule Blocking.

1. Record your time.

Use the Time Recorder sheet. The first step in any time management program is to find out where your time is presently going. Without this information it is hard to make decisions about where your time should be going.

2. Determine where your time should be spent.

3. Enter the external events onto your schedule. These are the "have to do's" over which you have no control - they just have to be done.

4. Next, enter the tasks that give you energy - schedule them for your low time of the day. Your Biological Prime Time Graph is designed to help you determine your high energy and low energy points during the day.)

5. Enter your A B C priorities. Start with the A's. Do not schedule more than 50% of your time. 50% of your time should be unscheduled

to deal with new priorities that will surely arise during the day.

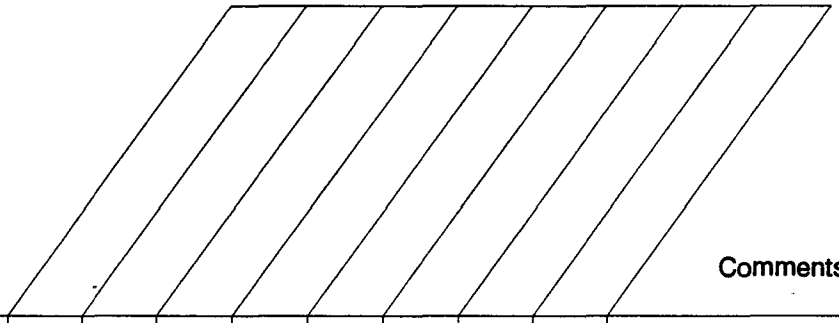
When you do put your A B C priorities on the schedule enter them in "blocks" of time. You can get more done with a concentrated effort on a task then you can if you have to constantly switch from task to task.

As you enter your A B C priorities try to reward yourself with an enjoyable task whenever you complete a nasty task.

TIME RECORD

Name_____ Date_____

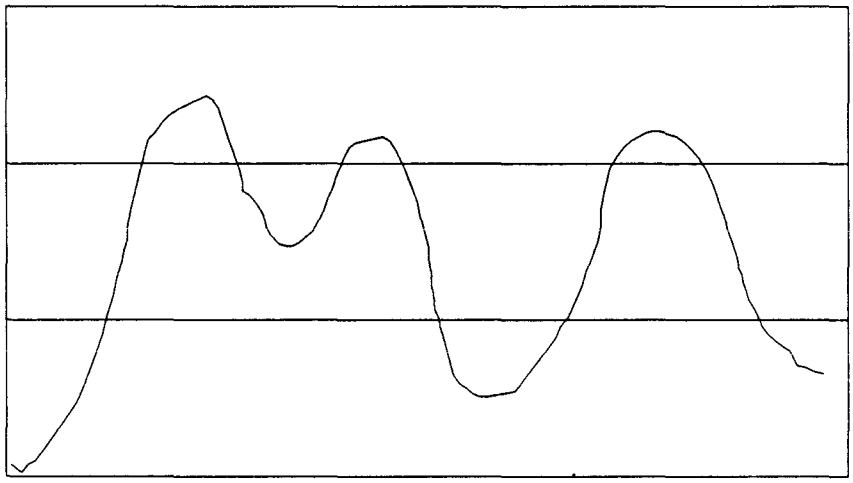
Activities

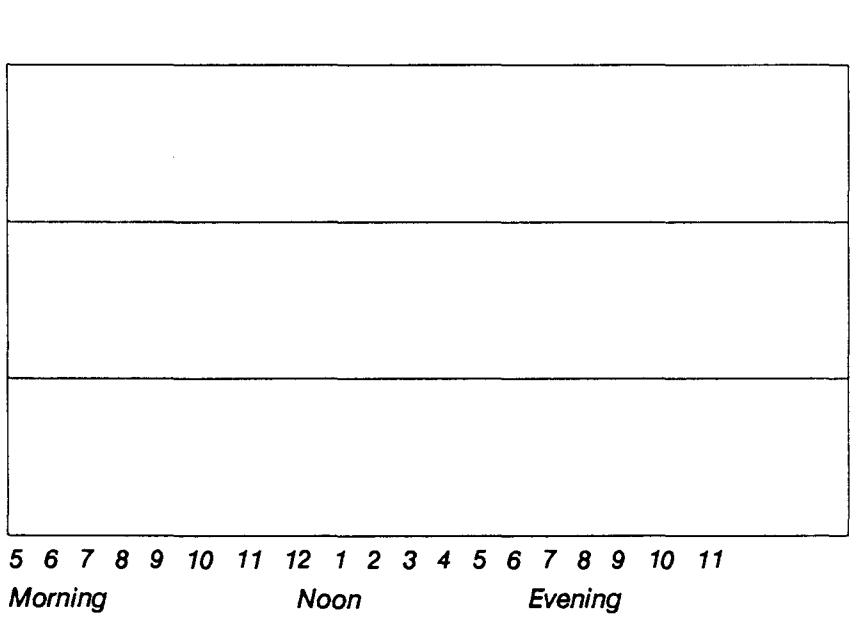


Time									Comments
8:00									
9:00									
10:00									
11:00									
12:00									
1:00									
2:00									
3:00									
4:00									
5:00									
Total Time									

BIOLOGICAL PRIME TIME

On the graph below, draw the pattern of your level of energy as it functions throughout the day. A sample chart is illustrated for your reference.





ABC PRIORITIES

In the spaces below, list at random the things you plan to do during the next week.

After you have made your list, assign A, B or C priorities to each item.

In the last column, assign 1, 2 and 3 priorities within each letter grouping

Tasks I Plan To Do	A, B, C	1,2,3

ABC PRIORITIES (CONT)

Using your A-B-C list as a guide, write down the A action steps for today in order of their importance (A-1, A-2,A-3, etc.) Similarily, make separate lists for B and C items. Most people however, never bother with the B and C list because the A's are more than enough to keep them busy.

A Priorities

A-1

A-2

A-3

A-4

A-5

A-6

B Priorities

B-1

B-2

B-3

B-4

B-5

B-6

WEEKLY "TO DO" ANALYSIS

Week of_____

Priority A B C	Rank 1 2 3	Activity or Project	Estimated Time	Energy Level H M L

WEEKLY SCHEDULE

Time	Monday	Tuesday	Wednesday	Thursday	Friday
7:00					
8:00					
9:00					
10:00					
11:00					
12:00					
1:00					
2:00					
3:00					
4:00					
5:00					
6:00					

Self-Management Skills for Managers

Some Key Questions

1. What control do you have over the events in your employee's lives?

2. What control do you have over the way your employee feels as a result of the things that happen to them?

3. What control do you have over the events in your own day?

4. What control do you have over the way that you feel as a result of the things that happen to you?

The A-B-C's of Self-Management

Cognitive restructuring is the process by which individuals become aware of their irrational thinking patterns and change these processes to more productive ones.

The cognitive restructuring process involves a highly focused version of Albert Ellis' rational emotive therapy.

In brief, Ellis asserts that people do not have a direct "emotional" reaction to most situations, but rather, they think first. Ellis believes that people's emotional reactions are caused by their assumptions, evaluations and interpretations of the situations. In other words, people will respond based upon their belief about the situation.

The A-B-C Model discussed in the reading on Time Management is also an appropriate model for us to use in terms of self- management.

Rational Alternatives to Irrational Beliefs

State why each of the beliefs that appear below are irrational and substitute it with a belief that will be more likely to improve management performance.

1. It is important for me as a manager to be well liked and have the approval of everybody at all times.

_____

_____

_____

2. To be effective and respected I must prove myself to be competent and talented in everything that I do.

3. When things do not work out according to plan it is a terrible catastrophe.

4. People who challenge your ideas and offer objections to your suggestions are uncooperative and deserve to be punished.

5. It is easier to avoid difficult situations and your responsibilities than to face and deal with them.

6. Our past is important and it has a great influence on our feelings and behaviour today.

7. The way to happiness is to enjoy yourself, to relax and let life carry you along.

8. If you are faced with a difficult challenge or are required to take a risk it is only natural to get anxious, upset and worried about it.

Rational Beliefs for the Effective Manager: The Cornerstones of Excellence

1. The Invulnerable Self

This is a belief that is commonly held by successful managers. It is the belief that the "self" is never on the line. That is, who you are does not change or is not dependent on how well or how poorly you perform in any given situation, over your career, or in any area of your life. Your "self" won't change as you move from problem to problem or decision to decision.

If you changed your hairstyle, grew a mustache, changed your name, won a lottery, gave away all your money, - these changes would not effect who you are as a person, an individual, and a human being.

This idea that your "self" is never on the line cannot be proved by any scientific means but it is a very liberating and highly enriching belief. Unfortunately very few people hold this belief but the most effective performers in your job and industry almost all do.

An example - a tennis pro hits a great shot, wins the point and game putting him ahead 5

games to 4. The "professional" then says to himself "That was a great shot."

He doesn't identify himself with the shot, he merely admires the shot itself for being good. He doesn't say, "I'm a good player, what a great shot!"

Why does he deny himself the pleasure of congratulating himself for hitting a great shot? Because, if he is a great person when he hits a great shot, then he must be a lousy person when he hits a lousy shot. It is impossible to accept the first point of view without accepting the second.

One of the keys to great performance in tennis and in any other aspect of life is that the "professional" never wins or loses any part of himself/herself. The self is always there, always the same - invulnerable to the events in his life.

High performers who enjoy life and feel fulfilled simply do not worry or concern themselves with their person worth or value. To them, the question is settled. They are free from all the doubting and insecurity that plagues most of us. Because they are free from doubt and insecurity they can devote energy to the job that has to be done rather than wasting energy worrying about themselves.

But if our accomplishments are not the highs of our life, what is? There are some things that we do in our life that we seem to perform naturally and easily without any concern about proving ourselves or trying to make ourselves look good. Think of something that you have done that seemed second nature to you because for you it was easy, joyful, natural - it may have required a great amount of energy but it didn't seem like it because things went well, you had fun and your own self- acceptance was a given.

The highs of our life are just like this - things outside of self that we appreciate. We are free to appreciate them because we have released our energy from ourselves and are therefore able to expend it on that particular job or that particular person. The high of life comes from being able to give ourselves the ultimate compliment "I like myself just the way I am."

2. The World of Abundance

This cornerstone says that the resources necessary for success are always abundant.

If the manager believes that growth will be difficult, that resources to do the job are scarce - he/she will have difficulty succeeding in any business. If, on the other hand, the manager believes that the resources necessary to get the job done are available in abundant supply, he/she is more likely to be successful.

Why is this so? The power of positive thinking? Probably not. The reason is more likely because there really is enough resources to go around and people working for this company or organization really do have all the resources that they need to achieve their goals. In short, seeing the world and our own resources as abundant is seeing the world as it really is.

Albert Einstein once said that the most important question for people to answer is, "Is the universe friendly?" Of course science has not yet answered this question but to the effective manager it looks friendly. Evidence indicates that if you believe that the universe is friendly; if you expect the universe to be friendly...it will be.

What this means is that the managers who succeed in their careers and enjoy their work have learned that too much concern about employees or money or customer approval, or about one's ability to achieve results can be counterproductive. The professional is one who anticipates and is ready for problems, but doesn't dwell on them.

Of course, it is easier to think abundance when things are going well than when times are tough. But successful managers are quick to acknowledge that they perform better when they chose to think about possibilities rather than scarcities.

Successful people recognize that the market is waiting for them and it is plentiful. They learn to go for it and capture some of that potential without worrying about whether they will meet their weekly, monthly quota.

The hard part for most managers is to recognize and believe in the abundance of their own internal resources and personal power. But that too is there. You and everyone else have all the personal power you will ever need to accomplish your goals and life purposes.

3. Win-Win Problem Solving

The key to good management is that in every interaction with employees everybody wins even if the problem is not yet solved.

The win-win attitude starts with defining the purpose of the organization. The **purpose** of your organization is always to solve a problem or seize an opportunity. The **objective** of a business or an organization is to solve problems. That is, the way your organization becomes better off is by seeing that others are better off (problems solved) and growing. The end result is that everyone is better off because they got together and created a win-win situation.

Potential is lost when employees do not see how your organization can help them win. Progress is made (you win) when employees feel that you can (and are willing to) help them win.

4. Growth

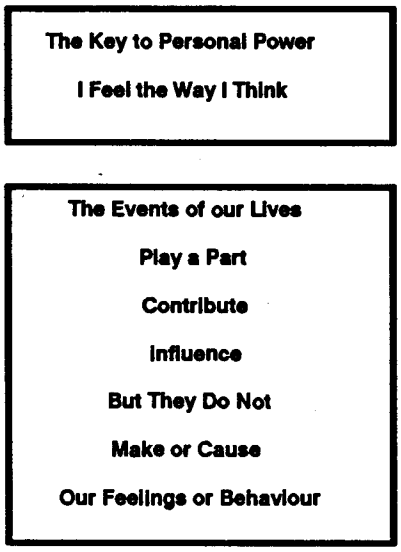
The elite group of managers has another thing in common - they never lose. They may miss a few opportunities here and there but they have discovered that every employee interaction - win, lose or draw - allows them to come out a winner one way or another.

Why? Because they know the name of the game is not to win but to grow. They love managing because interaction with employees offers an opportunity to grow.

An old expression says "to learn, seek difficulties". They didn't say, "make the best of difficulties", or "avoid difficulties". Facing the difficult situation head on is what allows us to grow.

Take a moment and recall a time when you experience great personal growth. Most people most of the time, will point to difficult or even painful events - an accident, and argument, an illness. Coaches say that the real character-building and lesson-learning comes after defeat, not necessarily victory.

Fig. 1 Key to Personal Power



Alternative Self-Talk - Some Examples

1. "Is being upset helping me? Do I really want to be upset? How do I feel now? What's going on?"

2. "Well I made a mistake. I'm human, and humans make mistakes. What can I learn from this mistake so that I can improve my performance the next time?"

3. "No one except myself can dictate how I will feel today."

4. "This is not a tragedy, not the end of the world. It's merely an inconvenience and I can handle an inconvenience."

Reality Statements

1. Outside events that we perceive as negative will occur.

2. We have little or no control over the events, but our thinking and behaviour can sometimes influence them.

3. We decide whether or not we get ourselves upset.

4. It's usually more beneficial to ourselves and others if we decide not to overly upset ourselves.

5. We can learn not to make a problem into a bigger problem.

Fig. 2 Self Talk Exercise

Self Talk Exercise

1. Describe an event in your life - on the job in your relationships with an employee, customer, co-worker or management that you became upset about.

2. How does this make you feel? Identify the negative feelings.	4. How do you want to feel about this situation?
3. What is your irrational self-talk?	5. What self-talk or affirmation will you use to make you feel the way you want to feel?

ROI - A Goal Setting System

ROI is an acronym used to refer to a goal setting process called Responsibilities, Objectives and Indicators. It is most effective when it is used in conjunction with Situational Leadership to build a performance management system.

ROI focuses on results and the activity required to produce those results.

The ROI process is like a funnel - moving from the general to the specific. Its purpose is to divide a huge part of the job into smaller pieces, which when accomplished or completed, contribute to completion of the larger job. The process is designed to help the manager take something that is large and unmanageable and make it manageable.

Why Managers will Avoid the ROI System

There are a great many advantages to installing a ROI system in the workplace. In spite of this many managers refuse. Why is this so?

First, Using an ROI system is not pleasant work because:

* We have to think.
* We have to use paper.
* We have to use orderly procedures.

Managers also don't like doing it because it is management work as opposed to operating work. Operating work is the work the manager does that offers a direct contribution to unit output. There is always a strong tendency to pull the manager away from management work and toward operating work. This is called the Principle of Operating Work. "When called upon to do both operating work and management work during the same time period, managers will do operating work." This is because:

* It is work that the manager is familiar with - in fact may be expert in.
* It provides more immediate gratification.
* It allows the manager to follow the stereotype of a successful manager - that being an effective problem solver.

But, time spent doing operating work takes away from time spent doing the critical aspect of the job: management work.

Mission

The first step in installing an ROI system is to determine the Mission of the organization and then of the work unit that you are managing.

It is important for any group of people who work together, who are managed, to have a mission. This includes the administrative and sup-

port units (some of whom may have trouble identifying with the organizational mission statement.)

Each work unit should have a mission statement that articulates:

* The unique or distinctive contribution to be made to the overall organizational objectives.
* The philosophy of how the work is to be done (statement of values).
* The unique or distinctive contribution that the unit makes to the larger organizational mission. (ie. the Strategic Objectives, Thrusts and Themes.)

There are several reasons why each operating unit should have a mission.

* Can focus on distinctive work and avoid doing work that other units are doing.
* Individual managers and employees will see relationships between what they are doing and what the unit is doing.
* Avoids efforts being spent on work that does not contribute to the unit.
* Everybody becomes more clear of their role, and how they can support each other.

Preparing a Unit Mission Statement

The following is a list of questions to consider as you prepare a mission statement with your work unit.

* What is the purpose of our organizational unit? Why does it exist? What business are we in?
* Who are our unit's primary and secondary customers/clients/users? Are we principally a production or support operation?
* What are our unit's principal products/services/functions?
* How do these products and services contribute to the overall mission of the organization?
* What is different about the work that we do as a unit as compared to the way it was done 5-10 years ago?
* What will be different about the work that we do 5-10 years from now?
* What should be different about our unit's work in 5-10 years?
* What is our unit's economic base? self-sustaining, part of a larger budgetary unit, assigned budget, etc.?
* What should be the nature of our economic commitment to the overall organization?
* What is unique or distinctive about our unit's work as compared to other units in the organization?
* What philosophical issues are important to the work that we do and how we choose to work together?
    - related to our organizational image?
    - leadership in our organization/profession/institution/community?
    - environment?
    - political factors?
    - innovation?
    - quality?
    - timeliness?
    - unit structure?
    - management approach?
    - administrative practice?

Mission Development Worksheets

Worksheet Number 1- Identify Clients

Mission: The Big Picture. Mission is the question: "From the customer/client's point of view, why are we here?

Identify the clients and/or customers that your organization has been created to serve. Then rate each of them as to their **importance** and **feasibility** using the rating scale of H = high, M = medium, L = low.

Importance - How important is it to your organization to provide services to this group?

Feasibility - How feasible is it for your organization to provide services to this group?

	Clients and Customers	**Importance**	**Feasibility**
a.			
b.			
c.			
d.			
e			
f.			
g.			

Worksheet Number 2 - Identify Needs

Identify the needs of the clients and customers that the organization has been created to meet.

Next, rate each listed need as to its **importance** and **feasibility** using the same rating scale: H = high, M = medium, L = low.

Importance - How important is it to the success of your organization that that particular need be satisfied?

Feasibility - How feasible is it for your organization to satisfy that need?

	Needs	**Importance**	**Feasibility**
a.			
b.			
c.			
d.			
e.			
f.			
g.			

Worksheet Number 3 - Identify the Service

Identify the actual and potential **products** and **services** the organization can to provide to its customers and clients. Then rate these as to their **importance** and **feasibility**, using the same rating scale: H = high, M = medium, L = low.

Products and Services	**Importance**	**Feasibility**
a. _____	_____	_____
b. _____	_____	_____
c. _____	_____	_____
d. _____	_____	_____
e. _____	_____	_____
f. _____	_____	_____
g. _____	_____	_____

Worksheet Number 4 - Identify the Values

Identify the underlying values and standards that should characterize the services and products provided by your organization. What is important to the organization? How do you want to do business? How do you want others to think about you and the way you do business? Then rate these items as to their **importance** and **feasibility** using the same rating scale: H = high, M = medium, L = low.

	Values and Standards	Importance	Feasibility
a.	_____	_____	_____
b.	_____	_____	_____
c.	_____	_____	_____
d.	_____	_____	_____
e.	_____	_____	_____
f.	_____	_____	_____
g.	_____	_____	_____

Characteristics of a Mission Statement

The next step is to review the answers to the four worksheets and then incorporate them into a unit mission statement that has the following characteristics:

1. The statement is not concerned with a particular individual's job.

It is more concerned with the organization as a whole.

2. The mission statement must act as an umbrella statement. All jobs in the organization and all activities that the organization undertakes fit underneath it.

3. The statement should be short and concise.

4. Customers, employees and management all see the mission from the same vantage point. It is meaningful to everyone associated with the business.

5. The statement is focused on helping people to meet needs and solve problems. It states the purpose of the business from the customers point of view.

Responsibilities

Once the mission statement has been formulated and put into place then the manager can work at introducing the ROI system. Each individual should have an ROI which serves as a job description and a performance management system. The ROI clarifies what each person is responsible for, what the objectives of the job are and what has to be done on a week by week or day by day basis to assure that the objectives are accomplished.

This is not a top-down system that we are proposing where the manager assigns responsibilities, objectives and indicators. On the contrary, the system is designed to facilitate the employee and manager sitting down and talking about the job, about what has to be done, about the resources available etc.

The ROI system is designed to communicate to the employee exactly what is required and is designed to assure that the supervisor and the employee have the same perception of the job and what constitutes good performance.

Responsibilities: Breakdown of specific work areas. Limit yourself to 4 - 6 result areas. Do not allow them to overlap.

* Responsibilities are your major areas of accountability on your job.
* Responsibilities are comprehensive result areas which define the major dimensions of your job. This list is your job description.
* In developing your list of job responsibilities, these guidelines should be followed:
    - Identify your major areas of responsibility by title.
    - Avoid combining major responsibilities under one heading.
    - Place minor job responsibilities under one heading.
    - Rank your responsibilities in order of importance.
    - List no more than five or six major areas of responsibility.

Responsibility areas are meant to be your key result areas. They do not cover all aspects of a job. They identify those areas where the results expected warrant specific attention by the manager.

The Critical Few

The point about selective determination of result areas might be best illustrated by Praeto's Law. The Principle of the Critical Few and the Trivial Many. Here are some examples of Praeto's Law at work.

* 20% of the players on any soccer team score 80% of the goals.
* 20% of your employees cause 80% of your problems.
* 20% of the items in a general store generate 80% of the sales.
* 20% of the activities performed on a production line cause 80% of the quality problems.

The percentage difference is, of course, not exactly 20% - 80% in all of these cases but it is approximately that - say 85% - 15% or 78% - 22%.

By determining the "critical few" it is possible to concentrate effort where there is the greatest payoff. When we identify result areas we are trying to identify those areas where a significant investment of time, energy, and talents can make the greatest contribution to the unit's mission.

Setting Priorities for Responsibility Areas

Determining what are or should be the key responsibility areas provides its greatest value to the manager in sorting out his or her own priorities. An additional benefit comes from being able to negotiate or communicate these priorities. Even if a manager and his superior can agree on what the key results areas ought to be there may be substantial differences as to the relative importance of these areas. Also, it is not unusual to have subordinates and peers gain a much greater appreciation of the manager's responsibilities through the use of this tool - to the point that they are able to play a more supportive role when working with that manager.

The Responsibility Grid

When a manager and his subordinate prioritize responsibility areas for their respective jobs independent of each other, the lists are usually different. Invariably, the manager and the subordinate look at the job in different ways.

The only way to settle these issues is through discussion - the manager explains her perception of the job, the employee does the same and together they come to an agreement about what should be done.

One way of settling these issues is to use the Priority Grid. The grid and the instructions for using it are illustrated on the next page.

Key Responsibility Areas for a Group

Up to this point we have been looking at key Result Areas as a means for determining where the job-holder spends his time and as a way of facilitating understanding between manager and subordinate. The process can be applied equally well to a group of people all doing similar jobs. The key Responsibility Areas are determined by the group members. Then, once the key responsibilities have been identified, the Priority Grid can be used to obtain group consensus on the order of priority.

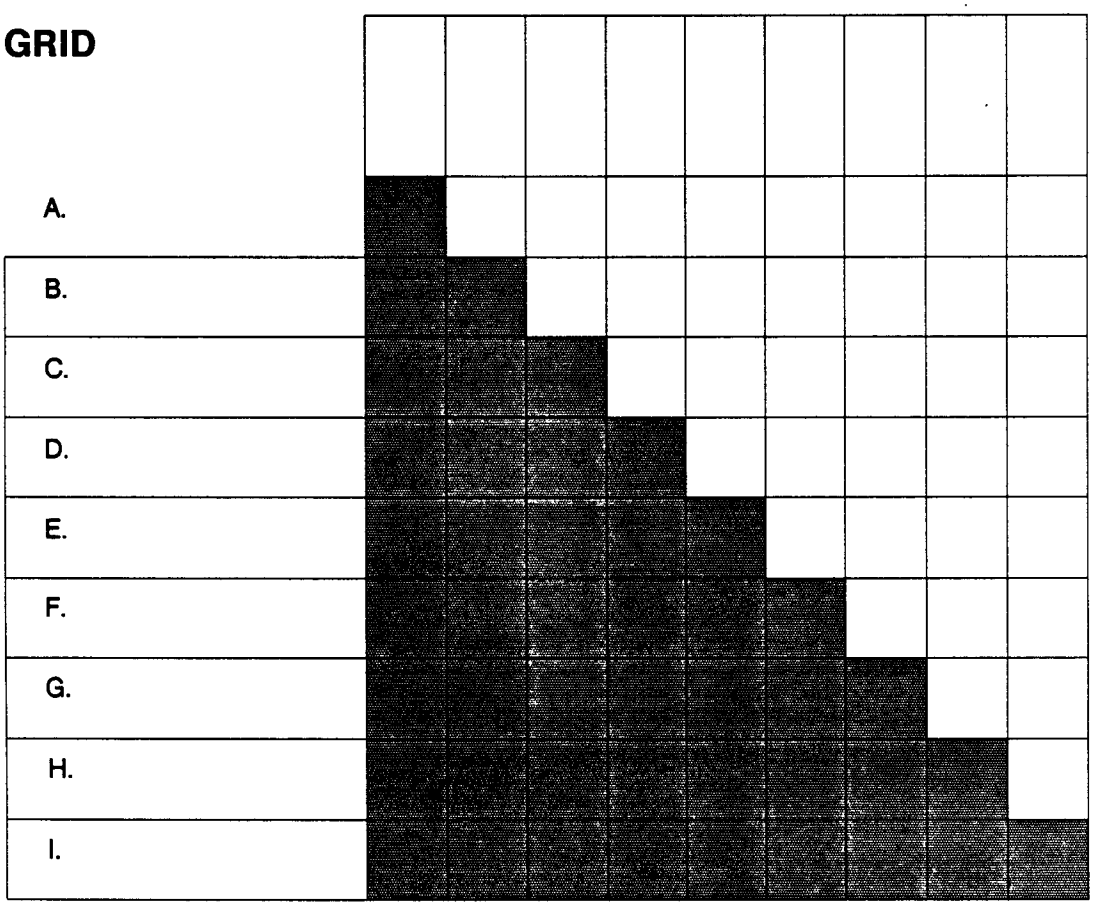
APPENDIX 3

Example:

Priority Grid

	(a) Farming Systems	(b) Prod.Intens. Factors	(c) Biotech (Plant/ Anima.,	(d) Crop Production	(e) Crop Protection	(f) Animal Production	(g) Animal Health & Vet Services	(h) Fisheries & Aquaculture Res. Dev.
(a) Farming Systems		a	a	a	a	a	a	a
(b) Prod. Intens. Factors			b	b	b	b	b	b
(c) Biotech. (Plant/ animal)				d	e	f	c	c
(d) Crop Production					d	d	d	d
(e) Crop Protection						e	e	e
(f) Animal Production							f	f
(g) Animal Health & Vet Services								h
(h) Fisheries & Aquaculture Res. Dev.								

Fig. 1 Priority Grid



1. List the responsibility areas
2. Compare each one to each other one
3. Count the number of times each appears
4. Arrange in order of priority

Sample Responsibility Areas

1. Establishing Annual Program
   Resource planning
   Organizing
   Co-ordinating
   Goal Setting

2. Scoring
   Defending
   Teamplay

3. Liaisoning
   Photocopying
   Providing Logistical Support
   Maintaining Personnel Records
   Co-ordinating Supplies
   Record Keeping
   Supervising

4. Policy-Making
   Attending meetings
   Hiring the CEO
   Protecting the assets
   Planning
   Controlling the activities of the CEO and the organization

5. Planning Research Projects
   Implementing the Project
   Producing Results
   Reporting

6. Typing
   Maintaining Data
   Filing
   Telephoning
   Receiving Visitors
   Budgeting

7. Applications
   Liaisoning
   Operating A.V. Equipment
   Maintaining Equipment
   Inventory
   Maintaining Conference Rooms

Objectives

Objectives: What: The "What" describes what will actually exist when the objective is complete.

How Much and By When: "The "How Much" and "By When" provide a description of the quantity desired and a time frame.

The second step in developing an ROI statement is to define the objectives of a particular job. An objective is a specific, measurable result to be achieved within a set period of time.

* Objectives explain what (measurable units and end result), how much (amount or number), and by when (time frame). They may also be qualified.
* In developing objectives, these guidelines should be followed:
    - First, establish "what" needs to be accomplished.
    - Second, determine "how much."
    - Third, determine "by when".
    - Qualify the objective - "how well".
    - Be specific.
    - Make your objectives challenging, but attainable.
    - Set objectives for each responsibility.

In general, Objectives are statements explaining "How Much of What by When".

The first subheading under objectives is the "What". It describes two areas:

* A measurable unit.
* An end result.

In the phrase "Number of manuals produced", "Number of manuals" is the measurable unit, and "produced" is the end result.

The second area under objectives includes "How Much and By When". In other words:

* Amount or number
* Time frame

Thus the objective "To produce 1000 manuals by January 1", breaks down like this:

What: Produce manuals
How Much: 1000
When: January 1

Another objective, "To complete all employee evaluations by Friday", breaks down like this:

What: Completed evaluations
How Much: All
When: By Friday

Ideally objectives will be written for all Responsibility Areas. Realistically, especially during the initial attempts at instituting the ROI system, it may be too impractical or too formidable a job. It may be desirable to introduce the approach gradually. Start out with a few objectives reflecting only part of each Responsibility Area. As the ROI is updated at regular intervals gradually introduce more and more objectives until the system is a comprehensive one.

Prioritizing Objectives

It is often helpful to prioritize objectives - especially when there are several objectives relating to only one Responsibility Area.

One way of prioritizing objectives is to divide them into three categories:

a. The Got to Do's - those objectives that have a direct relationship to success or failure.

b. Ought to Do's - those objectives that are necessary for improved performance, but not necessarily survival orientated.

c. Nice to Do's - those objectives that are highly desirable for improved performance but

which could, if necessary, be eliminated or postponed.

Another way of prioritizing objective is to use the Responsibility Priority Grid. This time however, it will be called the Objective Priority Grid.

Indicators

Indicators: The individual behaviours which, if accomplished, will result in the completion of the goal.

Developing indicators is the third step in the ROI process. An indicator is a specific, measurable activity that explains how well you are doing on the way toward achieving an objective.

* An indicator must be significant, measurable activity; it must be written the same way as an objective.
* In developing indicators, these guidelines should be followed:
    - Write at least one indicator for each objective.
    - Make indicators specific and measurable.
    - Create time frames for each indicator.
    - Make sure your indicators significantly impact your objectives.
    - Use specific indicators that you and your manager agree on.
    - Make your indicators easy to use.

The Benefits of the ROI System

The ROI system is a human not a mechanical process. It should never be implemented simply as an administrative procedure or reporting system. It is conceivable that an arbitrary, mechanical introduction of the steps in the process may produce a higher level of performance on the part of people farther down the organization, if for no other reason than someone finally told them specifically what was expected. However, that is not where the real payoff comes from.

1. It encourages commitment rather than compliance.

Compliance is "doing it because I have to". Commitment means "doing it because I believe in it".

As a manager or supervisor, you can demand compliance; compliance usually results in "doing what has to be done, but not much more". Commitment is a voluntary action and usually is related to the amount of involvement the individual has in the decision-making process. The more influence a person has over the things that affect him, the more he is likely to be committed to their successful accomplishment.

If managers want more commitment from people we have to give them more of the action. We can do that by giving them a say in designing the objectives that they should pursue. There is a risk in doing this but the potential benefits make this an outstanding managerial investment.

2. It encourages innovation balanced by reality.

The ROI process challenges people to make an input into their own objectives and the activities and issues that affect them. Therefore, the organization is able to tap the creative talents of people throughout the whole organization.

A participative ROI process resembles a "yo-yo" pattern. Top management starts by shaping a "big fuzzy ball" that identifies major concerns and a general picture of the direction it wants the organization to follow. At ILCA the "fuzzy ball" is the mandate, strategic objectives, the Thrusts and Themes. The "fuzzy ball" is then rolled down the string allowing those with key responsibilities to help shape it by tailoring their ROI's to what has to be done. By the time it is rolled back up the string, the "fuzzy ball" will look a little different.

This "fuzzy ball" process is then repeated right throughout the organization. The manager or supervisor communicates the general direction (the fuzzy ball) to the subordinates. The manager and supervisor then communicate and formulate a ROI for each subordinate. As this is done the fuzzy ball becomes less and less fuzzy until at the end of the process it is a solid ball being thrown toward realistic objectives.

3. It enables every manager to be a President.

The ROI process allows you to be the President of your own network. It reinforces the network management concept talked about earlier. When the "fuzzy ball" comes down to line managers, they can add their own inputs thus influencing higher level objectives. If they do not have the opportunity to influence there is usually some latitude to determine how to achieve the objectives.

4. It encourages negotiation and mutual agreement.

Since no two people hold the same perspective about the same job, we can assume the boss and subordinate have different ideas about the basic information, importance and approach. This is healthy. Under these conditions, objectives agreed to will be better than what any one person would have come up with individually.

5. It reduces or eliminates the need for the word "can't".

When a new objective is suggested, there is a natural temptation for the manager with a full workload to say "I can't do it". But when objectives are realistic, the manager is in a position to make tradeoff decisions.

It must be clearly understood that whenever significant changes are made to the agreement regarding objectives, the agreement must be up for renegotiation. The manager may have to modify the assignment, postpone certain elements, change priorities, etc. that may change the original agreement - but the manager is willing to do this to assure that the new pressing priority is dealt with.

6. It provides a rational basis for review and feedback on progress toward objectives.

When objectives are in place performance discussions can occur daily or weekly. Performance becomes easy to talk about because the objectives deal with specifics.

7. It encourages intergroup communication and teamwork.

The ROI process tends to reveal areas where open communication and cooperation with other groups or individuals are both necessary and desirable. They also highlight areas where conflict or potential conflict exist in a way that

allows the conflicts to be readily dealt with and resolved.

There is conflict in every organization. It is best managed by breaking complex operations down into their component parts and focusing on the contributions of individuals. That is ROI!

8. It provides a common language base.

One of the things that builds a common management culture is a common language base. ROI introduces a number of common terms to the organization that helps people communicate with each other.

The ROI Interview

The strength of the ROI process is that it encourages job-related communication. The ROI system should be a participative one - manager and employee negotiate responsibilities, objectives and indicators.

Here is a suggested agenda for the manager to follow during ROI discussions with employees.

The Opening

1. Greet the employee and set a positive tone for the interaction.

2. Offer the employee something (ie. perhaps some tea or coffee) and try to establish an atmosphere of giving and sharing in the process.

3. State the time limit - by doing this you reduce ambiguity and allow the employee to focus on the discussion.

4. State the objective. This step helps to further focus the direction and purpose of the discussion.

5. Ask for general reaction. This allows the employee to respond freely and raise concerns.

6. Assure the employee that you will cover his or her concerns. This assures employees that the results of the meeting will be mutually agreed upon.

The Process

1. Have the employee explain the Responsibilities, Objectives and Indicators (if the employee is a D3 or D4). Explain the Responsibilities or Objectives to the employee if the employee is a D1 or D2.

2. Conduct the interview according to the style that is appropriate for the employee's development level.

3. Gain agreement on Responsibilities, Objectives and Indicators.

4. Close the interview.

* Summarize what has been agreed upon.
* Identify any areas where you differ.
* Re-negotiate differences and gain full agreement.

ROI Worksheet

Identify Your Responsibility Areas

List The major responsibilities or result areas for your job (try to keep the number to 5 or 6.)

*

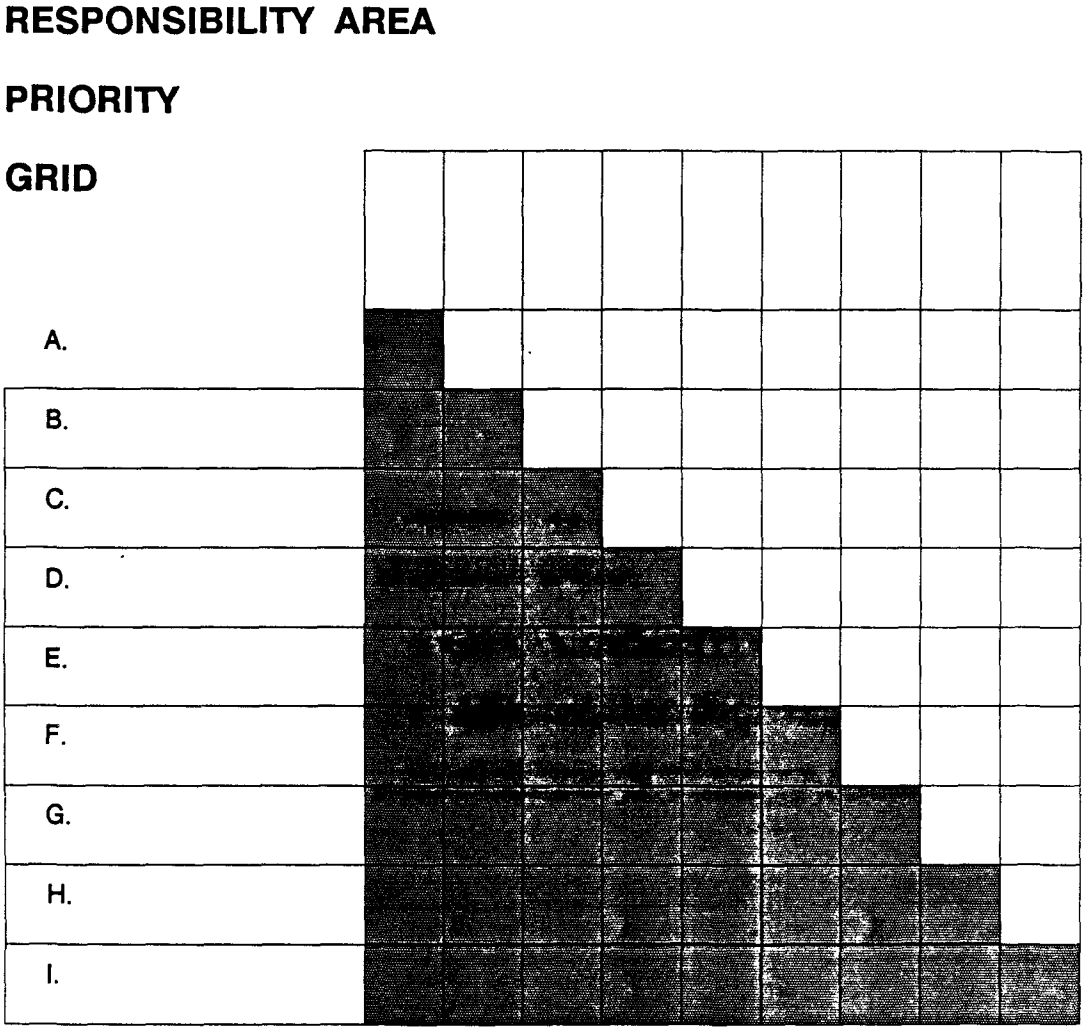
*

*

*

*

Fig. 2 Priority Grid



1. List the responsibility areas
2. Compare each one to each other one
3. Count the number of times each appears
4. Arrange in order of priority

Fig. 3 ROI

ROI

Responsibility _____

Objectives	Indicators

Dealing with Difficult People

Difficult or Just Different?

Behavioural scientists have developed a number of theories to explain what the manager recognizes everyday - people are different.

Compatibility between the project manager and all the people on the manager's network is obviously very important. The word chemistry is often used to describe this elusive concept, but each of us has experience relating easily with some people and being very uncomfortable with others. Those with whom we are uncomfortable are often described as difficult. But are they really difficult or just different?

It is very easy to blame the other person for any difficulties that arise as you work together. But this approach does not make any sense. Realistically, the only half of a relationship that the manager has any control over is his half. Rather than blame the other person for the cause of relationship tension, it makes more sense to concentrate on your half of the relationship and ask yourself three basic questions:

- Who am I? How do I come across when I interact with that difficult (different) person?
- Who is he/she? How does that other person like to work?
- What can I do about it? Given who I am and how I work and given who the other person is and how they like to work, what can I do to make it easier for us to work together?

Notice the third question places responsibility on the manager to make some changes to accommodate the difficult person. This is based on the theory of Psychological Reciprocity which says that if you make a move to accommodate the other person's differences, that person will also make a move to accommodate you. The result is that you move closer together and in so doing reduce relationship tension so that more time and energy can be spent on the task.

Common Sense

The Common Sense technology is a BASIC approach to understanding and working with others. The acronym BASIC will help us to set the context within which we will be working.

B - The B stands for *behaviour*. Common Sense is not focused on attitudes, feelings or thoughts. It deals simply with analyzing behaviour: what people do or say - that which is observable.

A - The A stands for *anticipate*. Common Sense is used to help us anticipate how we will behave in certain situations and also anticipate how others will react.

S - The S stands for *strategize*. Once we are able to use Common Sense to become more aware of our behaviour as well as the behaviour of others, we can develop an influence strategy. We can use this improved understanding of ourselves and others to become more effective at influencing others.

I - The I stands for *interaction*. Common Sense is an influence model. It is designed to help us be more effective in our interaction with others. It helps us to modify our own behaviour in response to another person's behaviour.

C - The C stands for *confirmation*. We use Common Sense to help us confirm who we are and how the others that we work with are likely to behave in different situations.

The Common Sense technology identifies four basic personality types (which are called Operational Patterns). Each has been given a name for easy reference. The labels are meant to be descriptive but they can be simplistic and misleading if you do not know what is behind each.

Each person is made up of a combination of each of the four operational patterns. Each person, however, has one or two dominant patterns. The most dominant is called the Primary Style. The next dominant pattern is called the Secondary Style.

Following is a brief introduction to each of the four types.

Thinker

The Thinker is characterized by a style of thinking which is logical, rational and linear. She places a high value on systematic inquiry. She views and interprets time as flowing from the past to the present and out into the future in a logical progressive manner. To understand a problem, the Thinker likes to know the past history, the present situation and what effect different alternatives will have on the future.

Thinkers display a heavy emphasis on logic, rationality, order, facts, objective thinking, problem solving, weighing alternatives analysis, and deductive reasoning.

People with a strong Thinker orientation are predisposed toward careers that rely on a sound and disciplined education such as accounting, the sciences, and teaching or they may be attracted toward activities performed by mechanics, machinists, or clerks.

Doer

The Doer is action orientated and practical. He lives very much in the present and is good at translating ideas into reality. He is good at implementing decisions because he feels a need for activity and to get things done right now. A Doer does not like to waste time. He is competitive and likes to win. The Doer is most likely to choose a career in which he can accomplish a great deal through action. Many Doers start new businesses or are attracted to activities such as engineering, athletics, or truck driving.

Doers are action and results orientated, pragmatic, responsive, driving, and competitive. They like to deal with things they can see, hear, and touch. They live in the *"now."*

Feeler

The Feeler is the warm and friendly type who places a high value on human interaction. He is a good and patient listener who can empathize with you and your troubles. He loves to help others and often chooses a career that will allow him to be a part of the helping profession.

His time orientation is more towards the past. Memories, stories, old friends and old experiences are important to the Feeler.

The Feeler communicates through feelings and intuition. They have a strong people orientation featuring empathy and sensitivity to others and to their environment. They have a sensory acuity and place an emphasis on relationship building in order to help them achieve their goals. The Feeler will tend to focus on the interpersonal aspect of a problem. His relationship with employees and peers is often that of friend, trusted advisor and sounding board.

Intuitor

The Intuitor is the conceptual, creative and theoretical type. She values ideas, change and innovation. Her time orientation is toward the future. Many Intuitors have difficulty living by the rules. They often become artists, professors, scientists, researchers, hairdressers, designers or advisors.

The Intuitor gravitates toward projects that focus on innovation and long-range strategic planning. Her focus will extend beyond the organization into larger issues involving community, the region and the world. She loves to build models and deals more comfortably with the big picture rather than the hands on details of project implementation.

The Intuitor is characterized by long range thinking, creative ideas, theory, working in the abstract, attempting to link seemingly unrelated events and discoveries into a universal theme, originality and imagination.

These are the four operational patterns which form the basis of all personalities. Each individual personality is a combination of all four types. Some people have such a dominant style that it is difficult to see the other parts of their personality. These people are often referred to as characters. They are the people who we never forget once we have met them. Other people will be more of a blend of the four types making it more of a challenge to determine which pattern is most characteristic.

Working with Others

It is generally true that you will be most effective with people who have personality profiles similar to your own. On the other hand, you can learn to adjust your behaviour to increase the likelihood that you will be able to work effectively with a broad range of people.

Here is a step-by-step guide for improving your ability to work with others - especially those who have personality profiles different from your own.

1. Identify your own personality profile in terms of the four basic types. Identify your primary style, your secondary style and be aware of whether or not your profile shifts under stress as compared to when you are in a situation that is more relaxed and friendly. For example, one person found that at work with the pressure on she behaved like a primary style Thinker but at

home among friends and family she came across as a primary style Feeler.

Use the chart in Fig. 1, A Basic Description of Each Operational Pattern on the next page to review the characteristics of each type. Then ask yourself: Is this style a lot like me? Not at all like me? - or A little like me?

Complete the Assessment form in Fig. 2, Assessing Your Operational Pattern. If you look at the form you will find space provided for two different assessments. One is labelled "Self". You are to complete this based on how you think you are viewed by others. The other side of the assessment form is labelled "Other". It should be completed by another person who knows you or who works with you. Compare the two assessments and use the feedback to determine who you are.

- Do you have a Primary style? What is it?
- Do you have a Secondary style? What is it?
- Does your style stay the same or change depending on the situation i.e. as you move from favourable conditions to a stressful situation?
- Is your profile a blend of 2 types? 3 types? or a blend of all 4 types?

2. Diagnose the personality of the people that you work with - especially those that you find to be difficult people (different people). Use the same chart to do this. Also observe their work environment, dress, manner of working, speech and lifestyle.

3. Try to understand how other people view you - especially those who are different than you. Refer to Fig. 3, Sources of Interpersonal Conflict. It presents each of the four personality types and how each type is perceived by each other type. The table is also prescriptive in that it provides guidance on how you can alter your behaviour based on who you are and who the other person is.

Notice there are no bad or good types. Each has its strengths and weaknesses. Each of us has a tendency to focus on the weaknesses of the types that are different from our own.

4. Parallel the behaviour pattern of people with personality profiles different than your own.

Paralleling is the central skill associated with the Common Sense technology. The idea is to alter your behaviour so that you move closer to the behaviour that the client (employee, customer, etc.) expects in order to reduce relationship tension and increase the amount of energy that both of you can devote to the task. If the other person sees you making an effort to accommodate his way of doing business then he will naturally be inclined to do the same for you.

Fig. 1 A Basic Description of Each Operational Pattern

PERSONALITY TYPE	BASIC DESCRIPTION	KEY CHARACTERISTICS EFFECTIVE	KEY CHARACTERISTICS NON-EFFECTIVE	OPERATING AT BEST	OPERATING AT WORST	VERBAL COMMUNICATION	BODY LANGUAGE	DECISION-MAKING
THINKER	Places high value on logic, ideas and systematic inquiry. Useful at problem identification, developing alternative solutions, weighing, testing. Time Orientation - linear from past to -present to future.	* data oriented * deliberate * weighs alternatives * consistent * objective * rational * analytical * exact & precise * well organized * steady * consistent producer * cool under pressure	* indecisive * over-cautious * too serious * unemotional * non-dynamic * controlling * nit-picking * inflexible * rigid * insecure * disinterested in human feelings	Consistent force of progress. Cuts through untested ideas and emotional fervor. Highly effective in organizing research and planning.	Overly cautious and conservative. Indecisive. Stumbling block to actions that depart from tradition. Rigid and dogmatic.	* precise * develops thoughts in logical pattern and talks the same way * thinks before speaking, unless dealing with familiar topic * tends to debate * listens well	* gives impression of sitting back * may count on fingers when dealing with points * hides emotions * little facial expression	* must have a lot of data * must have alternatives * needs time to make decisions
DOER	Places high value on action, results and practicality. Useful at translating ideas into something practical and workable. Time Orientation - present.	* action-oriented * practical * assertive * skillful * objective * decisive * resourceful * achievement-oriented * assessment in measurable terms	* short-sighted * cannot handle ideas * self-seeking * poor planner * does not trust others * impulsive * overbearing * dogmatic * opinionated * biased * anti-intellectual	Dynamo, committed, growth-oriented, resourceful, pragmatic, well organized, hard driving. Constructively impatient. Works tirelessly to coach less skillful.	Fails to consider long-range consequences. "Short circuits" significant steps in planning process. Imposes expectations on others. Overemphasized short term results. Acts impulsively.	* doesn/Et waste words * confrontative * not too concerned with the meaning of words * says what pops into his head * pushes into conversations * listens poorly	* often demonstrative * indications of being active, harried and impatient * uses himself physically to dominate environment e.g. may violate personal space of others	* very decisive * jumps to conclusions * wants to know what the results will be
FEELER	Places high value on human interaction. Useful in social, interpersonal settings; and assisting others with problems. Time Orientation - past.	* effective with people * spontaneous * persuasive * emphatic * values people * warm & reasonable * loyal * informal * politically aware * perceptive * anticipates responses * sensitive to needs	* too soft * manipulative * over-personalizes * sentimental * guilt-ridden * probing * subjective * too casual * thin-skinned * over-reactive	Skilled in communication. Patient, practical listener and observer. Accurate assessor of organizational politics. Reduces resisting forces.	More concerned with process than content. Less on logic and more on "gut reaction". Concerned with emotional impact only. Defensive and over-reactive.	* spontaneous speech * backtracks if feels he is being misunderstood or if he misread the situation * connects himself with others (name dropper) * may say what he thinks you want to hear * humourous * listens well	* uses active listening behaviours * tends to touch people * shows emotions	* needs to understand effect on others * consideration of who else has done something * needs low threat environment
INTUITOR	Places high value on ideas, innovation, concepts, theory, long-range thinking. Useful at problem identification, policy making, prioritzing long-term development. Time Orientation - future.	* ideological * conceptual * innovative * imaginative * creative * broad perspective * intellectually peristant * insightful * sees relationships between abstract parts	* wordy * too abstract * unrealistic * "pie-in-the-sky" * not relevant * out-of-touch * vague * pipe dreaming * not practical * hard to "pin down" * too unstructured	Leader and visionary. Focuses on crux of situation. Cuts through smoke-screen of tradition. Brings up fresh, novel approaches and ideas.	Long on vision; short on action. Avoids tedious nitty-gritty details. Does not see necessity of documenting contributions. Impatient with those who demand detailed evidence.	* pedantic * broad topics * sometimes disoriented (jumps all over the place) * references to recent readings and new ideas * self-centered re: communication * listens poorly unless he is really interested in the topic	* often takes reflective pose * Can be dynamic when dealing with ideas.	* hard to pin down details * must understand overall implications

Fig. 2 Assessing Your Operational Pattern

SELF		OTHER	
STRESS	FAVOURABLE CONDITIONS	STRESS	FAVOURABLE CONDITONS
NOT AT ALL LIKE ME 1 2 — SOME WHAT 3 4 — VERY MUCH LIKE ME 5	NOT AT ALL LIKE ME 1 2 — SOME WHAT 3 4 — VERY MUCH LIKE ME 5	NOT AT ALL LIKE ME 1 2 — SOME WHAT 3 4 — VERY MUCH LIKE ME 5	NOT AT ALL LIKE ME 1 2 — SOME WHAT 3 4 — VERY MUCH LIKE ME 5
WHY?	WHY?	WHY?	WHY?
NOT AT ALL LIKE ME 1 2 — SOME WHAT 3 4 — VERY MUCH LIKE ME 5	NOT AT ALL LIKE ME 1 2 — SOME WHAT 3 4 — VERY MUCH LIKE ME 5	NOT AT ALL LIKE ME 1 2 — SOME WHAT 3 4 — VERY MUCH LIKE ME 5	NOT AT ALL LIKE ME 1 2 — SOME WHAT 3 4 — VERY MUCH LIKE ME 5
WHY?	WHY?	WHY?	WHY?
NOT AT ALL LIKE ME 1 2 — SOME WHAT 3 4 — VERY MUCH LIKE ME 5	NOT AT ALL LIKE ME 1 2 — SOME WHAT 3 4 — VERY MUCH LIKE ME 5	NOT AT ALL LIKE ME 1 2 — SOME WHAT 3 4 — VERY MUCH LIKE ME 5	NOT AT ALL LIKE ME 1 2 — SOME WHAT 3 4 — VERY MUCH LIKE ME 5
WHY?	WHY?	WHY?	WHY?3
NOT AT ALL LIKE ME 1 2 — SOME WHAT 3 4 — VERY MUCH LIKE ME 5	NOT AT ALL LIKE ME 1 2 — SOME WHAT 3 4 — VERY MUCH LIKE ME 5	NOT AT ALL LIKE ME 1 2 — SOME WHAT 3 4 — VERY MUCH LIKE ME 5	NOT AT ALL LIKE ME 1 2 — SOME WHAT 3 4 — VERY MUCH LIKE ME 5
WHY?	WHY?	WHY?	WHY?

Fig. 3 Sources of Interpersonal Conflict

	As viewed by a....				
PERSONALITY TYPE	**THINKER**	**DOER**	**FEELER**	**INTUITOR**	**POTENTIAL ERRORS IN PRESENTATION**
THINKER	Generally, strong primary thinkers, will relate well, though theymay end up in long debates.	(a) too research oriented, overly complicated, too analytical, too much red tape, a dog chasing his own tail. (b) not action oriented, geared to administrative needs rather than "bottom line", too slow thinking. (c) hedging, can't make up mind, avoiding specific commitment re time, place, funds, etc., too concerned about eventualities and exceptions, lacking guts.	(a) mechanistic, cut and dried, too much faith in numbers, too task-oriented, overly structured, insensitive. (b) too formal, lacking enthusiasm, lack of spontaneity, light touch missing, inconsiderate of feelings, no sense of humour. (c) tradition bound, playing it safe, fearful, defensive, more concerned about form and protecting own image rather than have something good happen for others.	(a) pedantic, belabouring the obvious, repetitious, plodding, too concerned about present constraints of the system, locked in to way of thinking, only willing to make minor adjustments, conservative. (c) locked into the past and tradition, lacking vision, unimaginative, lacking originality, too structured.	* over explain * be too non-commital * monotonic * not express feelings enough - lack affect * appear pedantic * get involved in asking many fast questions * want to lay out presentation in too rigid a fashion
DOER	(a) lacking in depth, piece meal, shrewd, lucky, acting on untested assumptions and vague objectives. (b) making premature commitments, changeable, impulsive, ignoring past progress, short-sighted, crisis oriented. (c) lacking a systematic approach, not cooperating with others, too independent, rejecting the value of research and development, not using sound-tested business approach	Strong primary doers will relate well with each other. However, these people are often in conflict as they believe they each have the solution to problems and try to force it on the other.	(a) too task oriented rather than people oriented, only concerned with ends regardless of means or process. (b) ramrodding, overly stubborn, pushing people around rather than influencing them, dictator, too directive, old guard, authoritarian. (c) insensitive to feelings, not listening to other view points, suspicious, taking risks without conern that others may get hurt, using others for personal gain, no loyalty to past relationships.	(a) too simplistic, bull-in-china-shop, shooting from the hip, and self-centered. (b) too concerned with immediate or short term results with little concern for long term direction, fundamental policies or long term objectives. (c) opportunistic, swayed too much by competitive pressures, too commercially oriented, insufficiently professional, putting the cart before the horse.	* try to close too fast * not ask enough questions * command * jump in conversation and not let client finish * tell too strong - put client on the defensive * not take time to learn objections
FEELER	(a) too impulsive, relying too much on gut reaction, not thought through, swayed too easily by others, naive, too subjective. (b) lack of research, documentation and factual data, running with untested ideas, not appreciating established and sound methods, not objective. (c) failing to delineate and weigh alternatives, making commitments to people without considering available resources and other constraints, failing to forecast outcomes, premature.	(a) impractical, nice guy, too soft, not realistic, immature, blowing things out of proportion, more possibility than action oriented. (b) thin skinned, too sensitive to feelings that may get in the way, inconsistent - changing your position with changing political winds, yielding too readily when the going gets tough, not hard nosed enough, wishy-washy, defensive. (c) not getting nitty-gritty things pinned down in terms of next steps, specified assignments, timelines, etc., not results oriented, not laying out your expectations of others clearly, too non-directive, tending to leave this too open-ended, too much relating - not enough action.	Strong primary feelers generally relate well to each other.	(a) too concerned about feelings of others, accepting ideas of other without discretion, over-reactive, worrisome. (b) superficial in approach, lacking vision, no conceptual depth, lacking in overall perspective. (c) too concerned with the politics of the situation, "short term" and "stop gap" in approach, opportunistic, too gimmicky.	* spend too much time talking about past * forget to cite facts * over simplify * rely too much on your personality and not on data * tell too many anecdotes or stories * take too long to get to main point of your presentation * not push to bring objectives out in the open * avoid bringing unpleasant facts to the surface
INTUITOR	(a) too general and abstract, with inadequate detail and documentation. (b) too radical a departure from the past, violating tradition. (c) pie-in-the-sky, too "far out", untested.	(a) impractical, typical ivory tower stuff, "your head's in the clouds". (b) unproven, "why should I be your guinea pig?", approaches like this have got us into trouble in the past." (c) too wordy, "get to the point", too round-about, wasting time talking in generalities.	(a) too theoretical, bookish, unintelligible, too complex. (b) threatening, lacking structure, not respecting the past. (c) something "we're not ready for", lacking concern for people, insensitive to emotional reaction.	Strong primary intuitors generally relate well to each other.	* scattered comments - jumping about too much * raise too many ssues * appear ego-centered * too lengthy * appear dogmatic * appear too judgmental * appear condescending * be too abstract * concentrate too much on the concept - not enough on the "how" * not really "close" or tie down decisions

Paralleling

Paralleling is communicating with others using the personality type that matches the one that the other person is exhibiting.

For example, suppose you are working with a Primary Style Thinker. We know that a Thinker would want to know the history of the problem, the options available and where each option would lead in the future. So the paralleling skill simply tells us to meet the Thinkers needs. Give him what he requires to work efficiently - and what is efficient for a Thinker is to solve the problem in the Thinker style.

If you tried to work with the Thinker behaving like a Doer and trying to force a quick decision you will cause the Thinker to feel frustrated and pressured. If you behaved like a Feeler, you would again make the Thinker uncomfortable because of the focus on the relationship, feeling and emotions rather than on the facts and figures as the Thinker would prefer. The creative, innovative approach as advocated by the Intuitor would also be inappropriate because the Thinker does not like to take risks, break the rules or bend policies.

To parallel with a Thinker move into your Thinker mode (we all have some Thinker in us no matter what our Primary Style is) and provide the details, options, alternatives and facts and figures that that Thinker wants.

People with poor paralleling skills seem to have a limited desire to adapt to the needs of others. They prefer to do things for their own reasons rather than first considering the needs of the other person. They often use position power to influence others by imposing structures, rules or regulations and guidelines on those that they work with. Their behaviour is also very predictable. Because they are "stuck in their style" we can accurately predict how they will behave given certain situations. In general, those who have not mastered the paralleling skill lack a sensitivity to the differences between people and therefore run the risk of making other people uncomfortable.

People with good paralleling skills are recognized by their ability to adapt to the needs of others. They attempt to do things for other's reasons rather than just their own. They like to work with others in a way that allows the other person to be effective, comfortable and efficient. Good parallelers influence others by using personal influence and good communication skills rather than position power. They appear unpredictable at times because they have the ability to use all four dimensions of their personality depending on who they are working with and the details of the situation. Good parallelers are constantly asking themselves the question "What can I do to make the other person comfortable with me?"

Very often we use another word to describe a "good paralleler" - versatility. Versatility is our ability to manage our personality so that we can bring out the most appropriate operational pattern (Thinker, Feeler, Doer, Intuitor) based on what we are trying to do or who we are trying to influence. We are all versatile to some degree in our relationships with others but some people are more versatile than others. The consequence of being more versatile is increased comfort and reduced tension between ourselves and those that we work with. Our versatility can be improved by improving our ability to parallel. The more versatile we are, the greater our

ability to deal with operational styles that differ from our own.

For more information about how to Parallel, refer to the four checklists provided at the end of this chapter.

CHECKLIST FOR PARALLELING WITH THINKERS

DO'S	DON'TS
1. Prepare your "case" in advance.	1. Don't be disorganized.
2. Approach them in a straighforward direct way; stick to business.	2. Don't be giddy, casual, informal or loud.
3. Support their principles; use thoughtful approaches; build your readibility by listing pros and cons to any suggestion you make.	3. Don't rush the decision-making process.
4. Make an organized contribution to their efforts; present specifics and do what you say you can do.	4. Don't be vague about what's expected of either of you; don't fail to follow through.
5. Take your time, but be persistent.	5. Don't dilly-dally.
6. Draw up a scheduled approach to implementing action with step-by timetable; assure them that there won't be surprises.	6. Don't leave things to chance or luck.
7. If you agree, follow through.	7. Don't provide special personal incentives.
8. If you disagree, make an organized presentation of your position.	8. Don't threaten, cajole, wheedle, coax, whimper.
9. Given them time to verify reliability of your actions; be accurate and realistic.	9. Don't use testimonies of others or unreliable sources; don't be haphazard.
10. Provide solid, tangible, practical evidence.	10. Don't use someone's opinion as evidence.
11. Minimize risk by providing guarantees over a period of time.	11. Don't use gimmicks or clever manipulations.
12. When appropriate give them time to be thorough.	12. Don't push too hard or be unrealistic about deadlines.

CHECKLIST FOR PARALLELING WITH FEELERS

DO'S	DON'TS
1. Plan interaction that supports their dreams and intentions.	1. Don't legislate or muffle.
2. Leave time for relating, socializing.	2. Don't be curt, cold, or tightlipped.
3. Talk about people and their goals and opinions that they find stimulating.	3. Don't drive on to facts and figures, alternatives, abstractions.
4. Don't deal with details; put them in writing pin them to modes of action.	4. Don't leave decisions hanging in the air.
5. Ask for their opinions/ideas regarding people.	5. Don't waste time trying to be impersonal, judgemental, task oriented.
6. Provide ideas for implementing action.	6. Don't "dream" with them or you'll lose them.
7. Use enough time to be stimulating, fun loving, fast moving.	7. Don't kid around too much or "stick to the agenda" too much.
8. Provide testimonials from people they see as important, prominent.	8. Don't talk down to them.
9. Offer special, immediate and extra incentives for their willingness to take risks.	9. Don't be dogmatic.

CHECKLIST FOR PARALLELING WITH DOERS

DO'S	DON'TS
1. Be clear, specific, brief, and to point.	1. Don't ramble on, or waste their time.
2. Stick to business.	2. Don't try to build personal relations.
3. Come prepared with all requirements, objectives, support material in well-organized "packages".	3. Don't forget or lose things; don't be disorganized or messy; don't confuse or distract their mind from business.
4. Present the facts logically; plan your presentation efficiently.	4. Don't leave loopholes or cloudy issues - if you don't want to be zapped.
5. Ask specific (preferably "what?") questions.	5. Don't ask rhetorical questions, or useless ones.
6. Provide alternatives and choices for making their own decisions.	6. Don't come with a ready-made decision, and don't make it for them.
7. Provide facts and figures about probability of success or effectiveness of options.	7. Don't speculate wildly or offer guarantees and assurances where there is risk in meeting them.
8. If you disagree, take issue with facts, not the person.	8. If you disagree, don't let it reflect on them personally.
9. If you agree, support results, not the person.	9. If you agree, don't reinforce "I'm with you."
10. Motivate and persuade by referring to objectives and results.	10. Don't try to convince by "personal" means.
11. Support, maintain.	11. Don't direct or order.
12. After talking business, depart graciously.	12. Don't do an "epilogue" bit after finishing business.

CHECKLIST FOR PARALLELING WITH INTUITORS

DO'S	DON'TS
1. Start however briefly, with a personal comment. Break the ice.	1. Don't rush directly into the business agenda.
2. Show sincere interest in them as people. Acknowledge their ideas and thoughts. Find ideas or concepts of common interest or involvement. Be candid and open about your own ideas.	2. Don't stick coldly or harshly to business; on the other hand don't lose sight of goals by being too personal.
3. Be patient and allow them to express their ideas and insights regarding your goals or objectives.	3. Don't force them to respond too quickly to your specific objectives.
4. Present your case softly, non-threateningly.	4. Don't be domineering or demanding; don't threaten with position power.
5. Ask "how" questions to draw their opinions.	5. Don't debate about facts and figures.
6. Talk and move casually, informally.	6. Don't be abrupt and rapid.
7. Throw out comments and ideas.	7. Don't force them to deal with the "how" question before they've had a chance to get into the idea.
8. Talk about the "big" picture.	8. Don't get too specific until you have discussed the big picture.

The LSCPA Process

A Conflict Resolution Skill

In the previous chapter we were talking about possible sources of conflict based on different people's different operational patterns. The idea, of course, is to reduce the likelihood of conflict by using the paralleling skill.

But, how can you deal with someone who is already defensive -- angry, upset, or fearful -- without making him or her even more defensive? Defensive behaviour may tempt us to react with indifference by saying: "I don't care about you or your problems." We might want to control them by simply issuing an order: "Just do what I tell you!" Or we might react with superiority: "How dare you bother me with your problem!" But these reactions will only make the person even more defensive. We would be sending the wrong message and making an existing problem even bigger.

When someone is acting defensively, the effective manager accepts the person's right to feel that way. The manager stays in a problem solving mode and helps the other person to overcome the *emotional* aspect of the problem and move to the *content* of the problem.

How can we move a person away from defensiveness and into problem-solving? That can be done using a problem solving process called LSCPA. The letters stand for: Listen, Share, Clarify, Present and Ask.

Listening

Active listening is one of the most effective ways to show that we care about the other person's feelings and opinions; listening reduces defensive behaviour.

When we listen effectively we can pinpoint the feeling that the defensive person is experiencing. We can do this in several ways: by gathering factual information; by achieving an understanding of the facts; by checking all assumptions; by restating the problem and how the person is feeling and by acknowledging the other person's agreement or disagreement.

Sharing

Sharing follows naturally from listening. By summarizing in our own words what the other person is feeling and saying, we are sharing the importance of their experience. Putting the other person's feelings first tends to reduce tension and defensive feelings.

Sharing another person's feelings shows we understand that each person has his or her own life experiences, ideas, and view of the world. We are showing that we are trying to understand their point of view - what they are feeling and why they are feeling that way.

Sharing means accepting the other person's right to hold the views they do. It gives them permission to feel and behave the way they want - even if we don't agree with them. In effect we are saying: "If I thought that way, I'd be just as upset as you are."

Sharing also shows a willingness to get involved with the other person. We are expressing our interest by communicating a message that says: "I really want to help."

Listening and sharing may need to be repeated. As long as the person is stuck on the emotional dimension of the problem listening and sharing must be continued. The procedure is to listen and share, listen and share, listen and share .....until *emotions* have settled down and the person is ready to deal with the *content* of the problem. Listening and sharing allows the person to ventilate their feelings of anger and frustration and get these feelings out of the way so that they do not interfere with problem solving.

Clarifying

The clarifying process helps the other person to begin to solve the problem. To clarify is to ask questions that help provide a bridge from the emotions associated with the situation to the actual problem.

The first step is to ask permission to ask questions about the situation and the problem. This insures that we are not assuming a superior or controlling attitude. When the person says it is okay and agrees to answer our questions we have successfully moved from the emotional dimension of the problem to the content dimension. Our objective now changes: to discover what the facts really are and how the other person perceives them.

Fact-finding questions are aimed at gathering information and data about the present or task situation. ***Feeling-finding*** questions explore the person's perceptions of the facts, their thoughts, opinions, theories and interpretations.

To solve the problem effectively both parties must work not only with the same facts but also with the same interpretation of the facts. Even when we feel we understand both facts and feelings we still need to double check by restating the problem to see if the other person agrees with our interpretation. When two people reach an agreement on the nature of the problem - only then can they begin to solve it.

Presenting

The clarifying step forces us to clarify the issue before we present the options or solutions. When we present the options, we do so from our base of technical knowledge using the skills that we bring to the problem. Now we can help the other person see what actions are possible. We must be careful never to assume a superior attitude or try to control the outcome - or forget to show interest and concern.

Note, the LSCPA process forces us to clarify the problem before we present our solution. This assures that we discover the problem (from the other person's point of view) before we earn the right to solve it. When we use the LSCPA

process successfully we never fall into the trap of having a great solution but for the wrong problem.

As with the Clarifying Step it may be necessary to start over with more listening and sharing if the person once again becomes emotional.

Ask for Action

After presenting the options, it is time to ask for action. Asking for action is the final step in the LSCPA process. We ask "what do you think?" or "Which of these options do you think is best?" It is important to ask because people are more inclined to stick to decisions they make for themselves.

When we ask for action we are helping others make their own decisions. We are asking how they want to solve their problems now that they understand the alternatives and the results of these alternatives.

The Conflict Resolution Skills: A Summary

1. Listen responsively to the other person's feelings in order to encourage them to express their feelings.

Nonverbal

Interested, concerned, good eye contact, nodding, leaning forward.

Verbal

Tell me more....

Uhuh? Yes? Really?

You really sound upset about...

I'm not sure I understand...could you go over that agenda?

2. Share your understanding and acceptance of how the other person is feeling.

And you feel that...

Sounds like...

I see what you mean; your concern is...

I'd feel the same way if I thought...

I don't blame you for feeling that way...

I think I see what you mean.. Your concern is that...

3. Clarify by questioning, listening and sharing to gain agreement on the real problem which is generating the negative feelings.

Is it fair to say that the real issue here is...?

Would you agree then that...?

Let me see if I understand the real situation.

Here's my understanding of the problem...Is that right?

4. Suggest a solution to the problem.

Many people have found...

Based on what you've said, I'd like to suggest...

Here's what we could do...

5. Ask the person to take action to solve the problem.

Are you ready to proceed?

As a first step we could... What do you think?

What about proceeding this way...

Defensiveness Causing Behaviours

LSCPA is a good communication process to use but it will not work unless the problem solver takes care to avoid defensiveness causing behaviours - behaviours that when used will cause the other person to become more defensive.

According to Dr. Jack R. Gibb, author of Trust: A New View of Personal and Organizational Development, six behaviours tend to stop communication and cause defensiveness in others. They are: judging, superiority, certainty, controlling, manipulation and indifference.

Well meaning people are often unaware of the fact that they too may unconsciously use these behaviours. In addition to the actual words that are spoken, the tone of voice and body language can also stop communication.

Judging - "You're wrong."

Evaluating or judging occurs when there is no listening but instead discounting the ideas or implying the other person is wrong.

Example

"I could have seen this coming a mile off. You people are going to have to learn to get your priorities straight. You've got to pay more attention to detail."

Superiority - "I'm better than you."

This involves communicating a feeling of superiority because of a person's position, information, knowledge or ability. One who acts superior has a way of referring to the other person's inadequacies.

Example:

"I don't agree. I've been around here long enough to know. If you'd listened to what I tried to tell you in the beginning, we wouldn't be sitting around here now trying to make sense out of all this."

Certainty - "Don't confuse me with the facts. My mind is made up."

This message implies that the sender knows all the answers and doesn't need or desire any additional information. There is a need to be right, even to the point of winning an argument rather than solving a problem.

Example

"As far as I am concerned we have talked about it and I've made the decision. I want to see some results by the end of the week."

Controlling - "Let me tell you how to do your job."

Controlling is trying to change or restrict someone else's behaviour or attitude by imposing certain values or beliefs on them. Managers often believe that this is their responsibility.

Example:

"I tried to tell you how to complete this job - but you didn't listen. Now I need your complete attention for the next half hour."

Manipulation - "Gotcha."

Manipulation is communicating with hidden motives in a way that uses others to meet one's own needs. This type of communication has a "gotcha" feeling. Manipulation is different than influencing. When we influence others we are trying to find a solution so that it benefits both parties. When we manipulate we are seeking a solution that benefits us at the other's expense.

Example:

"If Mr. Smith calls, please tell him that I am not in the office today."

Indifference - "You're not important. What you say doesn't count."

Indifference shows a lack of interest or concern for the feelings of others.

Example

After you have made what you thought was your best presentation in favor of proceeding with the project immediately, your boss says, "Okay I guess that means that we will do what I had suggested and delay things another month. Perhaps we can meet at that time.

Non-Defensiveness Causing Behaviours

Dr. Gibb has also identified six behaviour modes that encourage communication: description, equality, openness, problem- orientation, positive intent, and empathy.

Description. The opposite of judging.

The person applying description requests information about ideas in an attempt to understand them. The person presents feelings or perceptions which do not imply that others are wrong or need to change.

Example

"You have gotten off to a good start. The way I see it is that we have scheduling problems. You have given me some valuable ideas and I now have a better understanding of the problem with the deadlines. As I see it we could ----."

"I see it this way. How do you see it?"

Equality. The opposite of superiority.

Communication is enhanced when you treat others with respect and trust. Differences in talent, ability, power, position and status often exist, but the person who encourages communication seems to attach little importance to these distractors.

Example

"Let's see if we can come up with some ideas. I have confidence we can work this thing out."

"We're in this together."

"I'm glad we have different viewpoints - that gives us a more complete view of the project."

Openness. The opposite of certainty.

The person with an open attitude investigates issues rather than takes sides on them. The open person is seen as a problem solver rather than a debater. The open person likes to solve problems together and appreciates participative problem solving.

Example

"What do you see as the key issue here?"

"Let's hear your ideas. You're right. That's a better idea."

Problem Orientation. The opposite of controlling. "

When a person communicates a desire to work together to define a problem or seek a solution, he or she is seen as asking questions, seeking information, and having no predetermined solution, attitude, or method to impose.

Example

"Tell me how you feel this could be a problem." Perhaps we can work out a solution together."

"You know about the problem and I'm sure you have the answer."

Positive Intent. The opposite of manipulation.

Behaviour that appears to be spontaneous and free of deception encourages communication. If the person is seen as being straightforward and honest, and as behaving spontaneously in response to the situation, he or she is likely to create minimal defensiveness.

Example

"Can we go back and focus on our common objective for a moment?"

"Here are my motives - this is why I decided to act the way I did."

Empathy. The opposite of indifference.

"I appreciate your concern. I sense your frustration." "I understand how you feel; "I'd feel the same way if I were in your shoes."

Empathy reflects feelings and respect for the worth of the other person. The person having empathy identifies with other people's problems, shares feelings, and accepts another's reaction at fact value.

Example

"I appreciate your concern. I sense your frustration."

"I understand how you feel; I'd feel the same way if I were in your shoes."

Fig. 1 Communication Encouragers/Discouragers

Discourages Communication	Encourages Communication
Judging	Description
Superiority	Equality
Certainty	Openness
Controlling	Problem-Orientation
Manipulation	Positive Intent
Indifference	Empathy

Self-Management Revisited

In another chapter of this manual we talked about self-management skills. These are very important when using LSCPA to deal with a conflict situation. In order to help somebody else get themselves under control you must be in control first. In control of what? In control of you?

Remember:

- You can only be helpful if you control your own tension.
- Other people have a right to be upset if they want to.
- You are not responsible for the other person's upset. But you are responsible to your employees and peers - to help solve the problems they are getting themselves upset about.

When we talked about self-management skills earlier we dealt with the concept of self-talk. When confronted with an emotional situation here are some things that you can say to yourself to keep yourself in a "neutral problem solving state." We described this state as a state of "relaxed concentration".

- Other people make themselves upset, and I can't control their feelings. I can remain calm and use my skills to influence them even though they are upset.
- Is being upset helping me? Do I really want to be upset? How do I feel now?
- Well, I made a mistake. I'm human and humans make mistakes. What can I learn from this mistake so I can improve my performance?
- No one except me can dictate how I will feel about this situation.

The LSCPA process demands that you have complete control of self. Being in control doesn't have to mean that you feel great. It's

tough to feel great when you're involved in a conflict situation. A more appropriate feeling is one of relaxed concentration - the neutral state.

SECTION III

Project Planning

Related Management Issues

Funding

IDRC does not see its role as a permanent funder but contributes start-up funds which are usually the most difficult for the institution to find. IDRC is not able to provide on- going operational grants. The grant period is usually from one to three years. It is intended to allow the recipient to plan for integration of the information activity generated by the IDRC project into its institution's core budget. This has happened in many instances but unfortunately, there are some recipients, because of their location or the nature of their work who will always be looking for operational grants to continue extending service.

Academic and research institutions and NGOs have many demands on their budgets and often library and information services do not receive the priority they deserve. It is often difficult to convince decision-makers of the importance of a good information service.

IDRC understands that implementation of a information service takes a very long time - a period of ten years has been suggested as the minimum. That is why many of these projects extend into further phases with each phase representing one more step in the consolidation process.

Project Design

Ideally, a project moves through the following cycle on its way to attaining the status of a self-sustaining locally funded operation.

The readings that follow in this section present the skills that an effective project manager uses in order to direct the project through this cycle. This brief overview of the project cycle deals primarily with the relationship between the donor and the recipient at each phase. The readings that follow focus on the planning skills that are used in each phase.

1. Project Analysis Phase

This is the formative stage in which the recipient works out the design and format of the service; conducts the necessary end-user surveys; decides on the training needs; establishes long-term goals and objectives; and tests the methodology. Much of this design work can be accomplished in partnership with the donor in the form of consultancies, study tours, or

workshops. The end product will be a set of recommendations for future action and a clarification of the commitment to longer term funding.

2. Decision Making Phase

This is the start of the main program where the methodology is applied to objective accomplishment. This is a period for developing links to other national and regional infra-structures. This phase involves working to a realistic plan of action.

3. Implementation Phase

The success of this phase is dependent on the quality of planning done in the previous two phases. Hopefully, funding of this phase will be characterized by a substantial and growing local contribution to assure donors of the bona fide intentions the recipient has to assume long term responsibility for the project.

4. Evaluation (Disengagement) Phase

During disengagement, donor funds are confined to completing specific tasks and solving the problems that still remain. The donor's role is to support local attempts to achieve financial independence. Evaluations are completed to assure that what has been learned in the project is recorded so that other projects can benefit in the future.

Long Term Prospects

If disengagement is to be a reality, project managers must consider self-reliance very early in the project. Some considerations should be given to:

- Membership fees as a source of funds.
- Operate, where possible, on a fee for service basis.
- Obtain private funding sources.
- Cost reduction by sharing or co-operating with other institutions or divisions.
- Develop a marketing strategy.
- Develop relationships with other donors and develop multi-donor plans.

Promotion of project outputs is the subject of a separate reading in this manual. Refer to the Table of Contents.

Making Links

Sharing resources is a key element in an IDRC program. There is large scope for South-South cooperation. Making the right links leads to expanding professional expertise. Project managers should encourage the formation of professional networks and associations. Making links to relevant international, national and regional organizations is a valuable mechanism for enhancing project objectives. Once viewed as random, unstructured and informal, such networking is now viewed as an essential way of developing professional relationships.

Essentially, it means keeping in touch by making yourself known. A well designed brochure, distributed according to a well designed plan will help a lot.

Many projects have links to major international organizations such as FAO, UNIDO, etc. These organizations provide valuable help in areas such as compatibility, mechanization, training etc. and also can assist in giving the project a high profile.

These links are important but IDRC does stress South-South contact so the institutions in the South can help each other build greater institutional capacity.

The Future

The time will come when the project has to strike out on its own, to assume its responsibilities for continued operation independent of donor funding. It will be prudent for project managers to plan for that day rather than let it creep up upon them. A well laid plan of action for independence will impress benefactors, but more importantly will inspire self-confidence. You can make it work, if you try.

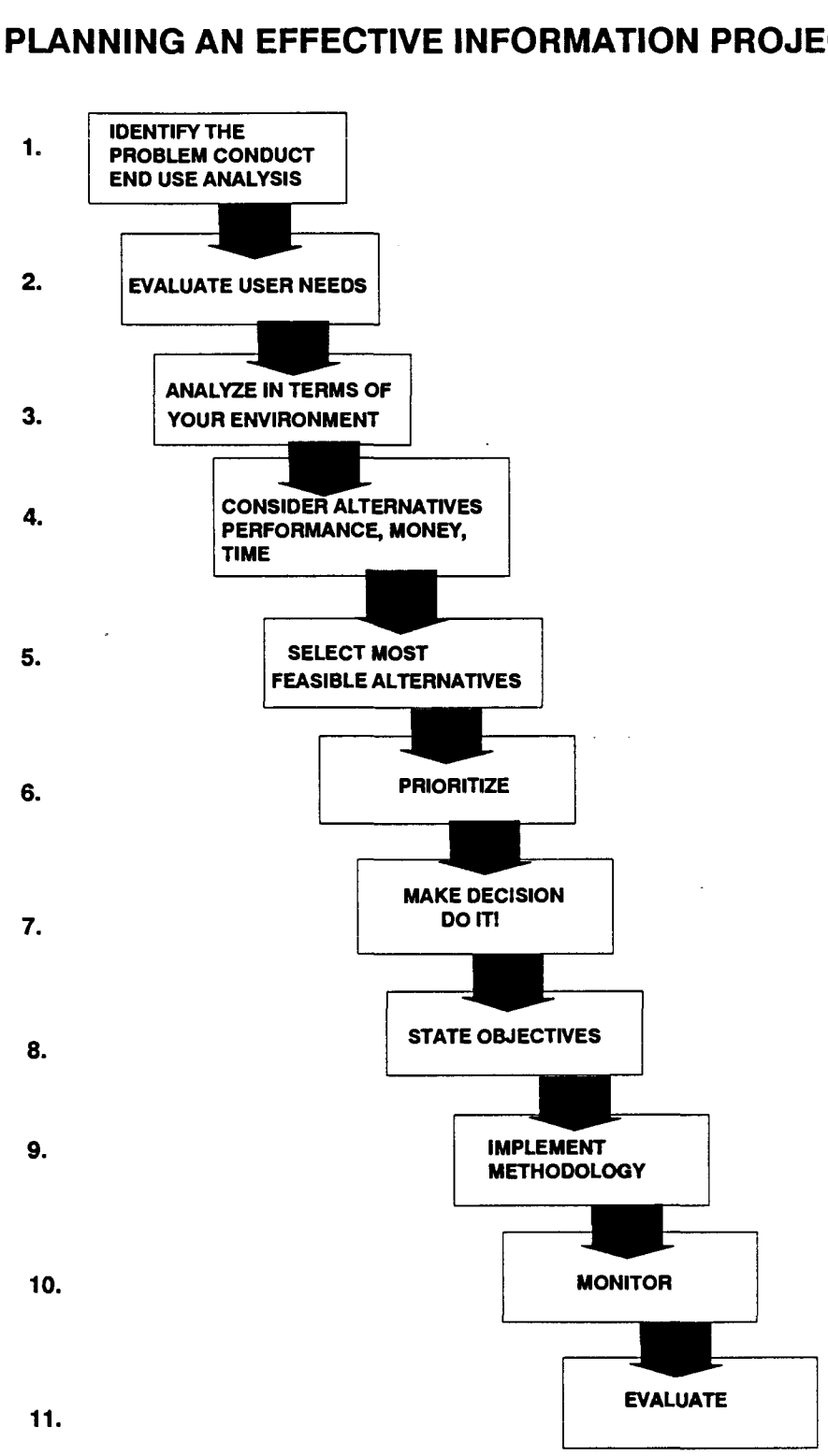
The important point to remember is that operational costs are much cheaper than start-up costs. Make sure your grant agreement really does cover all the start-up needs and avoid having to reallocate budgets where possible to take account of items of equipment necessary to the operation. If, during the grant period the information project has not clearly demonstrated its usefulness to the trustees of the core budget, no amount of additional donor funding will justify the existence of the project. Therefore, it should not to be supported further. We realize, of course, that project managers cannot be expected to anticipate the decisions of their own trustees on future budgets. We also know it is extremely difficult to demonstrate the monetary value of information, i.e. what would be the case if the project did not exist. However, you will have greater chance of securing the future of the project if you:

- Consult.
- Plan to plan.
- Evaluate.
- Advise.

The major links that have to be maintained are the trustees of core funds and other internal *decision-makers*, users who may be a powerful lobby on your behalf partners and *stakeholders*. Partners are those collaborating with the project. The stakeholders are those organizations that have an important bearing on the work.

All linkages at the institutional, national, regional and global levels must be intensively developed and maintained. This is the only efficient way to solve the information needs of developing countries in high priority areas with limited means.

Fig. 1 Planning an Effective Information Project



Developing Project Action Plans

The development of a project action plan is particularly important for the successful implementation of projects supported by IDRC. A good action plan will help the project manager keep on schedule and meet objectives, and bring the project to a successful conclusion.

Many projects fail because the tasks inherent in the project and methodology are not organized in a systematic way. Therefore this reading will provide exercises to help perfect the planning process.

Worksheet Number 2: Phase Two - Decision Making

The Decision-Making Worksheet stretches out the problem analysis stage. Its purpose is to slow down the planning phase so that the planning team becomes aware that there are choices to be made because there is always more than one way to proceed toward the project objective (whether we are conscious of the alternatives or not).

When we make choices we are applying criteria that reflect what we value and what we do not value (whether we are conscious of those criteria or not).

The process we use to make choices says a great deal about the kind of organization we really are.

Generate, Evaluate, Decide

The first part of the Worksheet asks you to restate your problem statement.

Once that is done you are directed toward alternative solutions. In the space provided list as many solutions to the problem that you can think of. Don't worry about their value or usefulness. Simply strive for quantity - the more the better. There is room for ten but don't let the form stop you from listing 15, 20, or 50 alternatives!

Now go back over the list of alternatives and use your judgment to pick the one that appears to be the best solution.

Make notes about each alternative under the heading "*Evaluate Alternatives.*" This is a good discipline since it forces you to consider even the wildest idea. Identify both positive and negative attributes of each alternative. Looking for the positive attributes in the ideas that do not appeal to you may open new possibilities.

WORKSHEET #2 — Decision-making Worksheet

"What is the solution?" in this phase we generate several possible solutions, evaluate each, and select the "best".)

Example: (From Workshop)

what is now? Existing State

Date _____

Generate Alternatives
list below as many ways as you can, to move from "what is, now" to "what is desired."

1 _____
2 _____
3 _____
4 _____
5 _____
6 _____
7 _____
8 _____
9 _____
10 _____

Evaluate Alternatives
indicate your assessment of each alternative below.

1 _____
2 _____
3 _____
4 _____
5 _____
6 _____
7 _____
8 _____
9 _____
10 _____

Decide mark you choice(s) with an x.

1 _____
2 _____
3 _____
4 _____
5 _____
6 _____
7 _____
8 _____
9 _____
10 _____

Goal or Desired State
what is desired, should be, etc?
when?

Target Date _____

Your project:

what is now? (from phase one) Existing State

Date _____

Generate Alternatives
list below as many ways as you can, to move from "what is, now" to "what is desired."

1 _____
2 _____
3 _____
4 _____
5 _____
6 _____
7 _____
8 _____
9 _____
10 _____
11 _____
12 _____

Evaluate Alternatives
indicate your assessment of each alternative below.

1 _____
2 _____
3 _____
4 _____
5 _____
6 _____
7 _____
8 _____
9 _____
10 _____
11 _____
12 _____

Decide mark you choice(s) with an x.

1 _____
2 _____
3 _____
4 _____
5 _____
6 _____
7 _____
8 _____
9 _____
10 _____

Goal or Desired State
what is desired, should be, etc?
when? (from phase one.)

Target Date _____

Weighing Alternatives - a more sophisticated decision making procedure when choices among competing alternatives is difficult. To use this process first eliminate some of the workable and unrealistic options by using the process on the reverse side. What should be left is no more than three competing options.

Example: (From workshop) alternatives	impact on "problem" low/med/high	cost to complete low/med/high	resources utilized external/mixed/local	possible side effects negative ··· positive	learning opportunities for local people low med high	decision

Your Project alternatives	evaluation criterion (A)	evaluation criterion (B)	evaluation criterion (D)	evaluation criterion (D)	evaluation criterion (E)	evaluation criterion (F)	evaluation criterion (G)	etc.	etc.	etc.	decision
alternative one:											
alternative two:											
alternative three:											

How will decision be made? and who will make it? (In some projects, the method of decision making and who makes the decision is as important as what is decided.)

· how will the decision be made?

· by authority of one person ☐	· by consensus ☐	· by ☐	· by ☐
· by small, powerful group ☐	· by unanimus decision ☐	· by ☐	· by ☐
· by majority vote ☐	· by abication ☐	· by ☐	· by ☐

· who will make the decision?

· a project manager in a local n.g.o. ☐	· a local gov't official ☐	· ☐	· ☐
· a senior executive in a local n.g.o. ☐	· leader in the affected community ☐	· ☐	· ☐
· a project manager in a foreign n.g.o. ☐	· a group rep. those most affected ☐	· ☐	· ☐
· a senior executive in a foreign n.g.o. ☐	· all the persons affected by the project ☐	· ☐	· ☐
· an official in a donor agency ☐	· a clique within the group most affected ☐	· ☐	· ☐

Now it's decision making time. You are not forced to choose only one of your alternatives. You may choose several of them... or all of them.....or none of them. Or you may choose to combine the positive features of one idea with the positive features of another to produce an entirely new solution!

Making Difficult Decisions

When it is difficult to choose between competing alternatives, assess each option against some pre-established criteria.

Establishing the criteria by which the decision will be made is often a difficult task in itself. Decision makers often have difficulty agreeing as to which criteria are important and which are not.

A list of criteria appear on the worksheet to give you a few examples. They are:

- Impact on the problem.
- Cost to complete.
- Resources utilized.
- Possible side effects.
- Learning opportunities.

How To Decide - Who To Decide

The last section of the worksheet asks you to think about how the decision will be made and who will make it. Think about your own experience and follow the procedure that is most appropriate for your group.

Don't Over-complicate Simple Projects

If the worksheet doesn't help you with your planning, then don't use it. If the worksheet merely outlines the procedures that you follow anyway don't be afraid to throw the form away.

The value of the worksheet is that it takes the project planners through a structured step-by-step process that assures the planners that their decision making process is valid.

However, if what you are already doing is working for you, don't change. An important rule of project management is *"if it isn't broken then don't fix it."*

Worksheet Number 3: Phase Three - Decision Implementation

In simple projects, the energy is usually focused on implementation. This is where you...

- Plan how you are going to implement the solution.
- Do what you planned to do.
- Monitor and control what you are doing to ensure that things are proceeding as planned and that the problem is being resolved.

Doing *"the right things, in the right order, right"* is the key.

Worksheet #3, The Decision Implementation Worksheet, is designed to help you plan a very simple project.

There are eight steps involved. Let's take a look at each one.

1. Prepare a Work Breakdown.

Break the project down into manageable pieces (there is room to identify 20 project activities.)

There are no rules for preparing a work breakdown (often called a Work Breakdown because you are simply breaking down the project into key activities.) Each activity requires that a certain task be carried out and that certain resources be used.

WORKSHEET #3 — Decision Implementation Worksheet

	1 WORK BREAKDOWN	2 SEQUENCE	3 ASSIGN CHRONOLOGICAL #'s	4 REWRITE ACTIVITIES IN CHRONOLOGICAL ORDER	5 DETERMINE SCHEDULE				6 DETERMINE BUDGET		7 ASSIGN RESPONSIBILITIES
					Start Date		End Date				
	Prepare work break down. Divide the project into logical & manageable action-steps	Sequence the activities contained in the work break down. The first step is assigned the number 100. If the next task happens after this assign a higher number, if earlier, assign a lower number	Assign #1 to the lowest number in column 2, assign a 2 to the next lowest number etc	Now re-write the activities in chronological order.	Planned	Actual	Planned	Actual	Planned Costs	Actual Costs	Who is responsible to complete this task
1											
2											
3											
4											
5											
6											
7											
8											
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											

Project organization: (form some projects you will need to assign responsibility to individuals and/or groups for particular activities. A chart like the one below can help you organize staff.)

who will be involved?	what specific activities steps, tasks will they be responsible for?	when is each to be completed? start date / completion date	what level of performance is expected? unacceptable / acceptable / outstanding	what authority do they have to act? wait for direction / recommend then act / act & advise / act on own
	1 2 3 4			
	1 2 3 4			
	1 2 3 4			
	1 2 3 4			
	1 2 3 4			
	1 2 3 4			
	1 2 3 4			

The guiding principle is to break down the project into logical and manageable units. What is logical and manageable for one person may not be logical and manageable for another. What tends to happen therefore, is that the same project can be broken down in many different ways depending on the experience of the project manager or project planning team.

Take a house building project as an example. A skilled builder may break down the project into a few key activities such as: prepare the foundation, construct floor, construct walls, construct roof etc. Because of his skill and experience he can work with very large activities. On the other hand, a person who had never built a house before would have to work through the project taking a great many very small steps. His work breakdown would be much more detailed. Rather than *"construct the walls"* the inexperienced builder would have to think of the project in terms of: estimate the lumber required, deliver materials to site, layout wall by marking on the floor etc. etc.

It doesn't really matter how detailed your work breakdown is as long as it meets your needs by breaking the project into logical and manageable units.

2. Sequence the Project Activities.

The next step is to sequence the activities in the work breakdown (Column 1).

Take the first activity and in the Sequence Column write the number 100. Ask yourself two questions about this activity: *"What must happen before this activity? and What must happen after this activity?"*

Then proceed to the next element in your work breakdown (column 1) and if it happens before number 100 assign it a number lower than 100. If the task happens after 100, assign it a higher number. Continue this procedure until you have asked the two questions about each activity and assigned a number to each.

3. Assign a Chronological Number to each Project Activity.

Locate the lowest number on the form. Cross it out. Write *"1"* in the Chronological Number column. Locate the next lowest number, and write "2" in the Chronological Number column. Continue until all the elements are numbered.

4. Rewrite Activities in Chronological Order.

5. Determine Schedule.

Schedule each activity by identifying a start time, a finish time, and an actual time. This is the basis for a very simple control system. As deviations occur between the estimated times and the actuals, changes may be made and subsequent activities rescheduled.

6. Estimate Costs.

Estimate the amount of money that each activity will cost. Again there is room to compare estimated costs with actuals.

7. Assign Responsibilities.

Assign responsibility for the completion of each activity.

8. Organize the People Involved.

The final part of the worksheet helps you plan projects that involve many different people. Each person who is assigned specific responsibilities needs to know:

- What they are accountable for.

- When they are to start and finish each of their activities.
- What level of performance is expected.
- And how much authority they will have.

Worksheet Number 4: The Project Budget

An essential part of the project implementation plan is the project budget. The Project Budget Worksheet provides a method for creating that budget.

Project budgets start with activities. Each activity consumes time, materials and services which all cost money. Budgeting involves calculating all the costs associated with an activity. These costs are then totaled to produce an overall budget.

Project activities are recorded in column number 1. Standard cost categories are listed across the top of the sheet.

Use the spreadsheet to record the actual as well as the planned expenditures. The columns headed "*actual*" and "*deviation*" will be completed as each activity is completed. This allows you to use the same form for both progress and final reports.

Calculating Costs

On the reverse side of the Project Budget Worksheet are examples of how budgets are prepared for the following expense categories: wages, rentals, travel, living, purchase of equipment and services.

THE PROJECT PLANNING AND CONTROL WORKSHEET

This worksheet is designed to help with the planning and implementation of larger, multiple activity projects.

The worksheet is too large to fit into this manual so it is provided separately. Accompanying the worksheet is a small pad of 1.5 x 2.0 inch paper (*Activity Forms*) with a substance on the back that allows them to be stuck to the worksheet, removed and repositioned many, many times. Pens containing water-soluble ink are also essential.

The Time Line

Along the top of the Project Planning and Control Worksheet, running left to right is the time line. This provides a visual representation of the beginning of the project, the key events along the way, and the targeted completion date. The time line is flexible in that it allows you to choose the units of time that best fit your project.

In the examples (the one year and five year project plans), the major unit of time is months.

This time frame is put together for a one year plan. For longer projects use more than one worksheet or adopt a different time unit.

Activity Forms

Each project activity is represented by a small stick-on form which identifies the following: the activity itself, the responsible person, the costs associated with the activity and the beginning and end dates. Here is one way to fill out an Activity Form.

WORKSHEET #4 — PROJECT BUDGET WORKSHEET

Project Activities	Items of Expenditure																					Totals		
	Personnel Costs			Travel and Living			Services & Equipment			Materials			Facilities			Administration Overhead			Contingencies			Total Planned Expenditures	Total Actual Expenditures	Deviations
	Planned	Actual	Deviation	Planned	Actual	Deviation	Planned	Actual	Deviation	Planned	Actual	Deviation	Planned	Actual	Deviation	Planned	Actual	Deviation	Planned	Actual	Deviation			

THE PROJECT BUDGET WORKSHEET (cont'd)

CALCULATING PERSONNEL COSTS

E.G. HOURLY LABOUR COSTS

# of person hours	275
wages per hour	x 10 KS
Total costs	2,750 KS

NOTE: The above personnel costs apply to those persons hired for the project and do not include the salaries of full-time employees who may participate on the project.

YOUR CALCULATIONS:

CALCULATING TRAVEL & LIVING COSTS

E.G. CALCULATING TRAVEL COSTS

# of persons travelling	4
Cost per fare	x 35 KS
Total costs	140 KS

E.G. CALCULATING LIVING COSTS

# of persons travelling	4
# of days away from home	4
Cost per day for hotel	20 KS
Total hotel costs	320 KS
Cost per day for meals	15 KS
Total meal costs	240 KS
Total travel & Living costs	700 KS

YOUR CALCULATIONS:

CALCULATING SERVICES & EQUIPMENT COSTS

TO RENT EQUIPMENT FOR PROJECT

E.G. TYPEWRITER RENTAL

# of typewriters required	2
# of months required	x 3
Cost per month	x 30 KS
Total cost	180 KS

TO RENT SERVICES

E.G. # of telexes/month	6
# of months	x 12
Average cost per telex	x 3 KS
Total cost	216 KS

TO PURCHASE EQUIPMENT

E.G. AUTOMOBILE FOR PROJECT

Purchase cost	3,000 KS
Interest Charges	300 KS
Total cost	3,300 KS

TO PURCHASE SERVICES

E.G. ACCOUNTING SERVICES TO AUDIT PROJECT

# of hours of prof. time	7
Cost per hour	50 KS
Total cost	350 KS

NOTE: The above equipment and services costs apply to equipment items and services purchased directly for the project.

YOUR CALCULATIONS:

CALCULATING MATERIAL & SUPPLY COSTS

TO PURCHASE TEXTBOOKS

E.G.

# of courses	15 KS
# of books/course	x 20
Cost per book	x 9 KS
Total cost	2,700 KS

YOUR CALCULATIONS:

CALCULATING FACILITY COSTS

TO RENT SPACE FOR THE PROJECT

E.G.

# of months space req'd	12
amount of space req'd	3,000 sq. ft.
cost per square foot/mth	.5
Total cost	18,000 KS

NOTE: Facility costs apply to space purchased for the project directly and do not include the cost the agency's premises.

YOUR CALCULATIONS:

CALCULATING ADMINISTRATIVE OVERHEAD COSTS

NOTE: Administrative overhead costs are agency costs that are not incurred on the project directly. They include such items as salaries of full time professional and support staff, rent, taxes, insurance costs, interest expense, telephone, utilities, depreciation, etc.

To assign administrative overhead costs to a project, follow this two-step procedure:

STEP 1: Calculate a burden rate per unit of output.

E.G.

Total Administrative Overhead	$200,000
Total person-days available to agency	1,100
Equals Overhead/person-day	$ 182

STEP 2: Allocate Administrative Overhead to Project

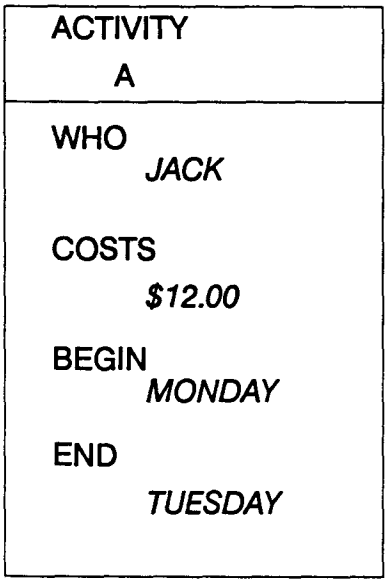
E.G.

# of person-days devoted to project	50
Burden rate	x 182
Administrative Overhead	$9,100

YOUR CALCULATIONS:

Once completed, these forms are placed on the Project Planning and Control Worksheet in relation to the time line at the top of the worksheet.

Fig. 1 Project Activity



For example, if an activity takes place during the first week in November, you would attach it to the worksheet under the heading *"November"*. Some activities, of course, will extend across several time categories. For now place them close to the start date.

The Cost Line

At the bottom of the Planning and Control Worksheet you will find the *"cost line"*. This line is designed to help you calculate the cash flow required to maintain the project. For a given time period, look down a column and find all of the activities scheduled to start at that time. Read the *"planned costs"* from the Activity Forms and total them up for the selected time period. Work with totals or sub-totals by category of expenditure. Entries are then made in the appropriate spaces on the Cost Line. These calculations are then transferred to the project budget.

Project Control

As the project activities proceed, it may be necessary to move activities around the worksheet in order to represent what really happened (as opposed to what was planned).

Make entries on the Activity Forms to show actual start and end dates and actual costs. Add up "actual costs" and enter them in the space provided on the Cost Line. These can then form the basis for required progress reports.

As an activity is moved around the worksheet to reflect what has actually taken place, look at how future activities are planned to see if they have to be moved as well. The impact of these changes on the Cost Line can then be calculated and new entries made if necessary.

Playing With The Project Planning And Control Worksheet

This worksheet is a valuable project management tool. But, it has to work for you. You do not work for it! Don't let the form take over the project. Play with it. Try to move activities around the worksheet to see if they could be completed at a better time or in a different sequence.

Show it to others. Encourage the members of the project planning team to experiment by moving activities around. Let them observe the effect of each change on sequencing, completion times and costs.

Direct your attention to the time periods where little or nothing is scheduled. Also look for periods where there is too much activity. Can you reschedule to better utilize people and other resources?

Record local and community events, cycles, etc. on the time line. A major festival, an election date, the visit of an IDRC program officer or representative of an interaction funding agency are all entered. These events will affect the availability of people, materials, support and funds. Now you can move activities around to develop a schedule that avoids problem time periods and takes advantage of slack times.

ADVANCED PROJECT PLANNING METHODS

When dealing with large projects that have a lot of activities, experienced project managers pay a lot of attention to:

- The duration of each activity.
- The connections between activities.

Working with both of these variables on one worksheet is difficult. In fact much of the literature on project management wrestles with this problem. Gantt charts show the duration of activities very well while PERT charts illustrate the interconnection of activities. It is rare to find a procedure that allows a manager to do both. The project manager has to make a choice or construct two different charts.

Our objective is to construct a project plan that is *"visual"* (with the time periods clearly illustrated) which also provides an acceptable degree of accuracy.

Duration Times

What about the activities that have extended duration times? To illustrate the duration of these activities on the Project Planning and Control Worksheet, take some blank Activity Forms and place them next to the original Activity Form. You now have a continuous row of connected forms that start at the start activity start date and end at the activity end date.

An alternative would be to draw an extension of the original Activity Form on the worksheet but this makes it more difficult to make changes and *"play"* with the timing and sequencing of the activities.

Interrelationships Between Activities

Arrows are used to show the interrelationship between activities. *An activity at the beginning of an arrow must be completed before the activity at the end of the arrow.*

This relationship is important for projects that have high costs associated with having materials and manpower at the right place at the right time. Delays could be costly and often mean the difference between success and failure.

When the project is large enough, we recommend that scheduling tools such as PERT and CPM be used. For our purposes, we will borrow from these more advanced techniques such as PERT to make our Project Planning and Control Worksheet a little more sophisticated.

Sequential Activities

Look at the illustrated one year plan. It illustrates project activities that occur over a twelve month period.

Activities that follow one another sequentially are lined up on the same horizontal line. If one activity is delayed, it has an impact on all subsequent activities.

When it is possible for more than one activity to take place in the same time period, the Activity Forms are stacked up with their edges touching one another to show that they are connected in one sequence.

Activity sequences that are independent of one another occupy separate areas of the worksheet. There should be some open space between them.

When there is a connection between an activity in one sequence and an activity in another, use an arrow to connect the sequences. In reality this will not occur very often because connections between sequences are usually obvious and are shown by placing activities in their proper time slots.

Time Estimates

So far we have seen how diagrams are useful for organizing project activities. They illustrate interrelationships between activities and allow the reader to get a comprehensive view of the whole project.

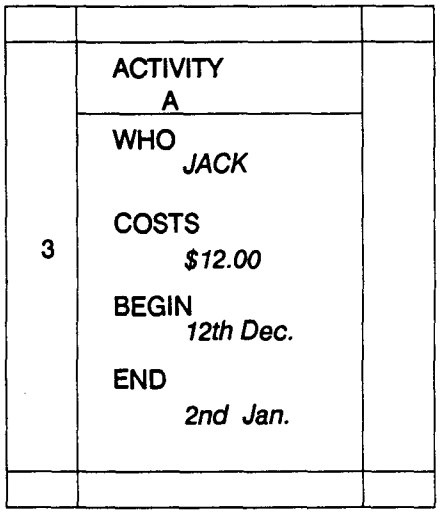
Diagrams also allow us to make decisions about scheduling and resource allocation. If we estimate the amount of time that an activity will take (duration time), we can use these estimates to schedule that activity in a way that makes best use of available resources. Record the duration time estimates right on the Activity Form.

One way to arrive at a duration time estimate is to ask the advice of those who have done similar work in the past.

A More Complex Duration Estimation Process

Another recommended procedure is as follows:

Fig. 2 Project Activity with Duration Time



Estimated Duration Time -- 3 wks

1. Calculate The Following:

* *The Most Optimistic Estimate*

If everything worked out perfectly and no delays occurred, how long would it take?

* *The Most Pessimistic Estimate*

If nothing went right and there were all kinds of problems, how long would it take?

* *The Most Likely Estimate*

If things went along as usual, how long would it take?

2. Take each of these estimates and weight them according to the likelihood that they will occur.

For example, plug them into a formula that is heavily weighted toward *"the most likely estimate"*, as follows:

(4 Times The "most Likely") + (the "most Optimistic) + (the "most Pessimistic") Divided By 6.

To illustrate: Suppose a Project Manager came up with the following time estimates for an important project activity: the most pessimistic estimate: 6 days; the most optimistic: 1 day; the most likely: 2 days. Plugging these estimates into the formula produces the most realistic estimate of 2.5 days.

This is a complex way of estimating and may not be necessary unless you are working to very tight deadlines on a project that is dependent on expensive labour and materials.

However, the discipline of estimating and then checking these estimates against what really happens is a very valuable exercise no matter how complex or simple the project. Even the best planned projects rarely turn out according to plan but if there are no plans at all there is no foundation from which to learn and improve.

Scheduling The Work

So far we have placed activities on the Project Planning and Control Worksheet in a way that illustrates how the activity will take place.

We will now look at a way of making these *"when"* decisions that is more precise and efficient.

Ignore, for the moment, the time line. Focus on getting the activities in their proper sequence within each major activity cluster. Concentrate as well on showing activities that connect one cluster to another. Use arrows to show that one activity must be completed before another starts.

Look at the Project Network Diagram entitled "The Critical Path". Note that two *"dummy"* activities have been added. One is labeled *"Start"* and the other is labeled *"Finish"*. These *"dummy"* activities are important if the objective is to create a precise schedule.

Other than *"Start"* and *"Finish"*, the example contains only nine activities. (In reality, if there were only nine activities to plan, a diagram would probably not be necessary.)

Look at activities A, B, and C. They all can be done at the same time so they are placed in a vertical column.

The arrow connecting A with D shows that A must be completed before D can start. Activity E cannot begin before both A and B are completed. You can figure out the other dependencies yourself.

Earliest Start And Earliest Finish Times

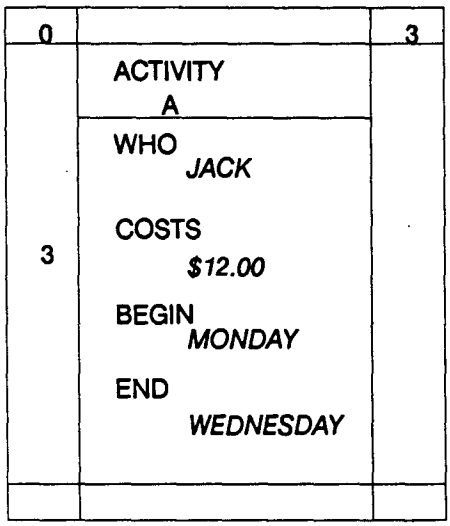
Once the network of activities has been completed, go through the diagram and record the earliest start time and the earliest finish time on each Activity Form. Record the *"earliest start time"* in the upper Left hand corner of the form and the *"earliest finish time"* in the upper Right as illustrated below.

Referring again to *"A Project Network Diagram"* these times can be calculated by start-

ing at the first activity and accumulating duration times all the way through the network.

Look at the diagram once again. Activity A's *"earliest start time"* is 0 and since its duration is 3 days, its *"earliest finish time"* is 3.

Fig. 3 Project Activity/Earliest Start & Earliest Finish



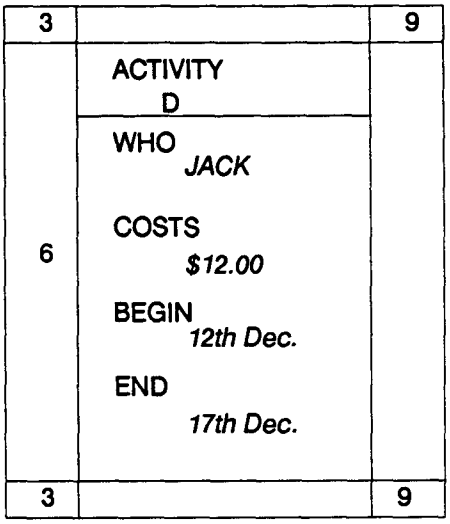
Since the activity D can't start until A is completed, its "earliest start time" becomes 3 and since its duration is 6, its *"earliest finish time"* is 9.

Latest Start Time And Latest Finish Time

Now work backwards through the network to calculate the *"latest start time"* and the *"latest finish time"* for each activity. Record these on the lower left corner and the lower right corner of the activity sheet as illustrated below.

These are calculated by starting at the end of the project, and working backwards.

Fig. 4 Project Activity/Latest Start & Latest Finish Time



The dummy Finish activity should have a *"latest finish time"* that is the same as its "earliest finish time".

Referring back to the illustration, activities H and I both have the same *"latest finish time"*. The *"latest start time"* is then calculated by subtracting the duration times from the *"latest finish time"*.

Latest Start Time = Duration Time - Latest Finish Time

Since activity G must be finished before both activity H and I can start, the *"latest finish date"* is determined for activity G by finding the most restrictive *"latest start date"*.

Since H has a latest start date of 10, G must be finished on day 10 at the latest.

The Critical Path

If you have calculated the earliest start and finish times as well as the latest start and finish times for each activity, it should be relatively easy to find the "*critical path*" through the network.

The "*critical path*" is the path through the network that links up those activities whose earlier start and finish times are the same as the latest start and finish times.

In other words, there is no slack time on the critical path. The critical path is the longest route through the network. The activities on the critical path are "*critical*" because of the following important principle:

"The shortest possible time to complete a project is the time it takes to complete the longest route through the project diagram."

For all other non-critical activities, there is some slack time. This means that these activities can be delayed without delaying the completion of other important activities. The amount of time these non-critical activities can be delayed is referred to as their slack time.

In the illustration the critical path is clearly indicated with a heavy line.

The Usefulness Of The Critical Path

It is useful to know the critical path for the following reasons:

1. Time, money or effort spent trying to speed up a project by shortening the duration of non-critical elements is wasted.

Why? - because if a non-critical element is completed faster than planned it has no effect of the duration of the complete project.

2. It may be possible to save money, effort or resources by allowing the non-critical elements to expand to fill the slack time that is available to them.

Why? - because if resources can be saved by using the slack time contained in the non-critical activities there is no effect on the duration of the total project.

3. Resources spent trying to speed up a project by shortening the duration of critical elements will probably pay off.

Why? - because any time spent on a critical activity directly effects the duration of the total project.

"Concentrate efforts and resources on the right activities. It will pay off!"

Completing The Schedule

It is now possible to enter activities onto the Project Planning and Control Worksheet with more precision.

Events on the critical path are, in effect, already scheduled! By reading the start and finish times, critical activities can be lined up with the time line very precisely (assuming your time line and your time estimates are written in the same time units).

As before, use blank Activity Forms to extend activities over certain time periods.

A Project Network Diagram
and The Critical Path

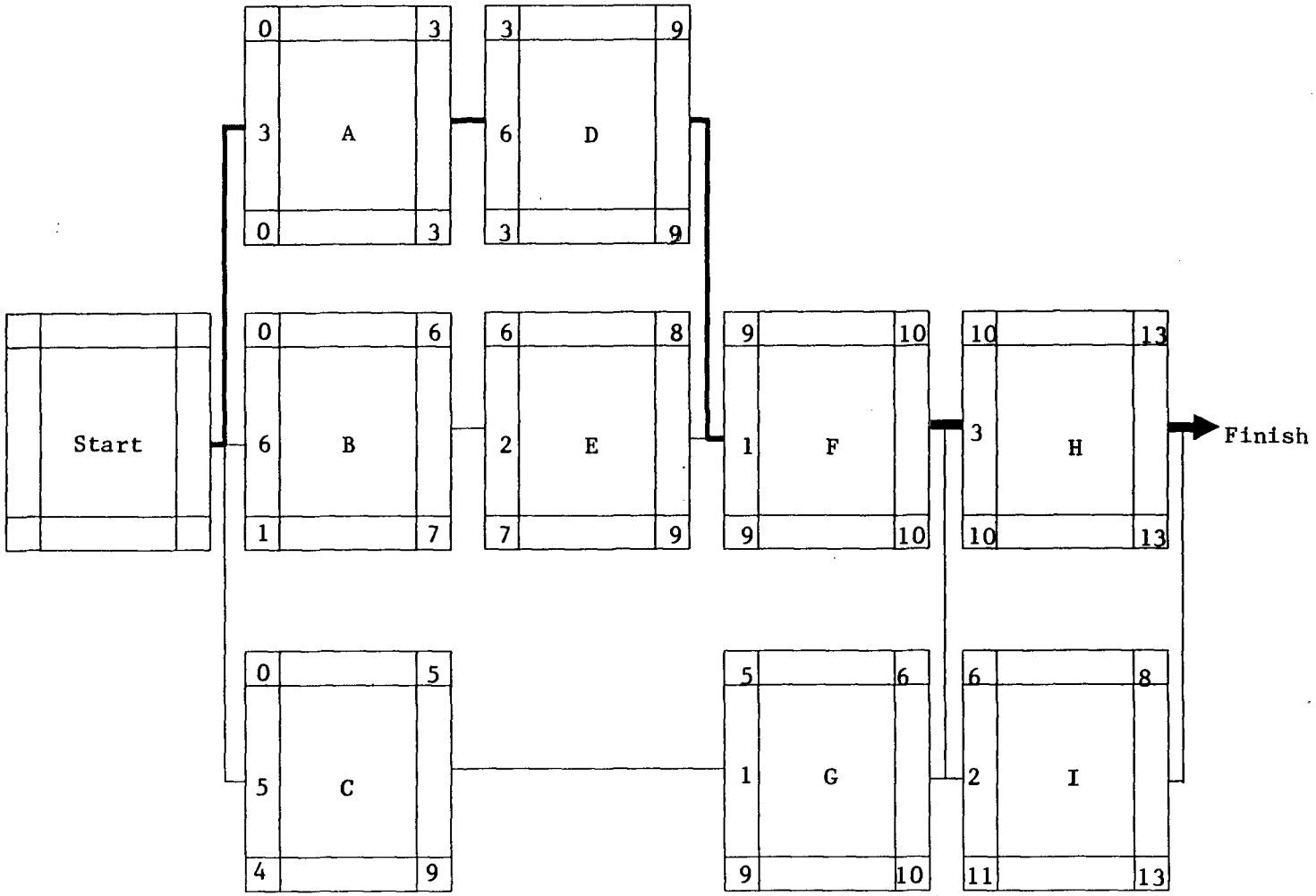


Fig. 5 Critical Path

Look at the diagram illustrating the critical path. The critical path is formed by activities A,D,F, and H.

The diagram also illustrates the freedom that is now available to schedule activities E,B,G,C, and I. Arrows are still used to show dependencies. Activities not on the critical path can be scheduled anywhere between the *"earliest start date"* and the *"latest finish date"* but, of course, you must pay attention to dependencies and duration. Once a time frame has been selected for one activity, it may limit your choices for others that are dependent upon it.

There is flexibility in scheduling the activities that are not on the critical path. They should be scheduled in a way that makes the best use of the resources at your disposal.

Look at the figure entitled *"Scheduling for Earliest Start Times"*.

All of the activities not on the critical path are scheduled for the *"earliest start time"*. All of the slack time is therefore available if needed.

The next illustration shows the opposite extreme and is entitled *"Scheduling for Latest Start Times."* The non-critical activities are scheduled to start at the *"latest start time"*. There is now no freedom in this schedule and every activity becomes critical. This is because any delay in any activity will delay the total project.

Somewhere between these two extremes there are probably some practical alternatives that make the best use of resources.

Experimentation is the only way to find the best alternative (short of entering all your parameters into a computer program and having the computer generate the answer!).

The Cost Line

The schedule that has been produced can also be used to calculate the project cash flow. Planning for cash flow means ensuring that there will always be enough cash to meet commitments as they fall due.

If the costs estimated for each activity have been entered on the Activity Forms, it should be easy to total these commitments to produce the figures for the cost line. If it is known how much lead time is necessary to produce a cash infusion, the necessary requests, reports etc. can be carefully planned so that progress payments are available when they are needed.

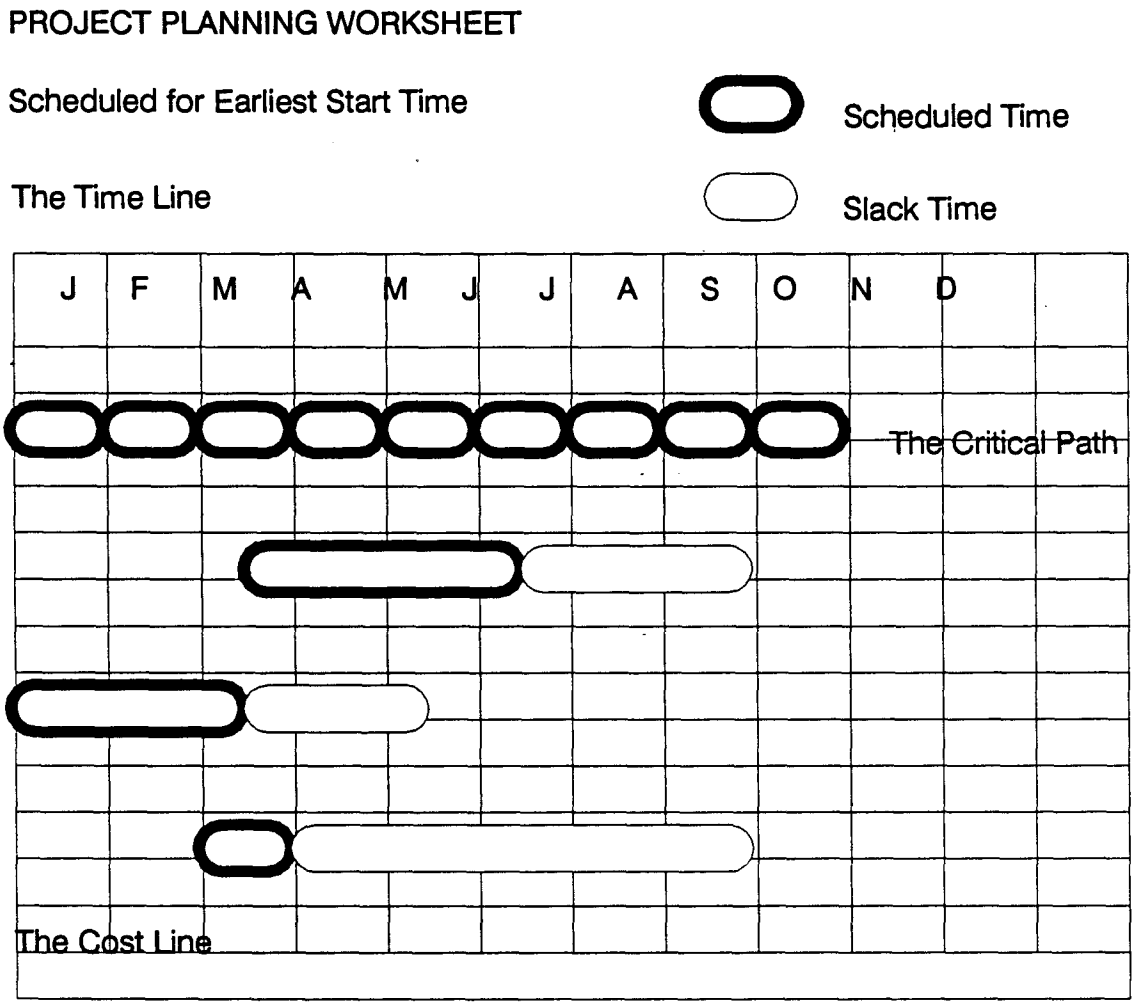
Cash Flow

Even after the schedule has been carefully prepared, it is rare that projects proceed exactly as planned. If an activity on the critical path is falling behind schedule, change the schedule to reflect the change.

If activities that are not on the critical path fall behind schedule, check the slack time available. If there is no slack time, then this activity has become critical and it may pay off to divert extra resources to get it completed.

Keep the schedule up-to-date. Record actual start and finish dates on the Activity Forms. Record actual costs. Move activities to reflect new realities. Recalculate costs both actual and budgeted to reflect major changes. Meet frequently with project staff to let them know how things are going and to get their input regarding changes needed to stay on schedule.

Fig. 6 Project Planning Worksheet - Earliest Start Time



Contingency Plans

For activities on the critical path, anticipate some of the obvious things that could go wrong and develop contingency plans to deal with these eventualities.

This is often called playing *"what if"* games because the idea is to ask *"what if"* questions about each critical activity.

- *"What if the final payment is delayed?*
- *What if we cannot get the required number of volunteers?*
- *What if the materials are delayed?*

After posing the questions, the project planners then develop a contingency plan to deal with the problem when and if it occurs.

(Remember Murphy's Law: "Whatever can go wrong, will! and at the worst possible moment."

Another consideration. The *80-20 rule* states that in any series of activities, a small fraction of those activities account for the major effects or influences. This rule is important for project managers since it means:

80% of all problems will probably be caused by 20% of the project activities.

The 80 - 20 rule suggests that a manager should identify those few activities that will be the source of most problems. If the manager is able to develop contingency plans for these activities he will be making very effective use of this time.

This type of management is often called *management by emphasis.* Using this system, the manager makes sure that he is spending 80% of his time and energy on those few and vital activities that will probably cause 80% of the problems.

Chances are very good that when those few activities are identified, they will be on the critical path. All problems on the critical path are serious because they have the potential to delay the complete project. Thus, management by emphasis ensures that extra energy and resources will be available for any problem that arises on the critical path.

Software for Project Management

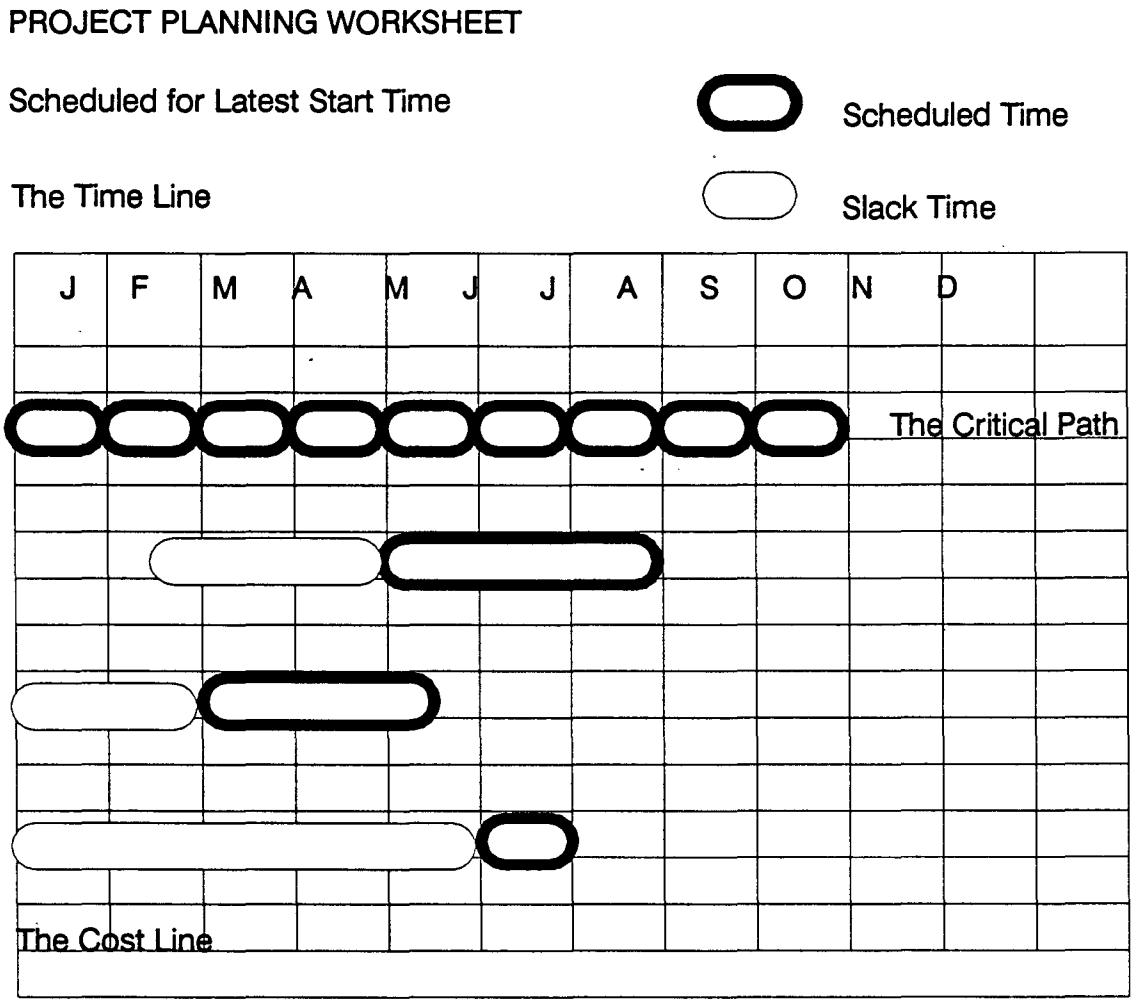
Project planning and control as we have been describing it over the last several pages is an ideal computer application. Software is available that facilitates the development of sophisticated project plans.

Project planning software draws network diagrams, creates schedules and calculates costs. The value of the software is that it allows you to make changes without having to redo the whole plan. For extremely large and complicated projects with many activities and tight schedules, the computer may be the answer to good project management. However, the computer is no substitute for carefully thinking the project from beginning to end.

Using Gantt Charts to Develop a Project Plan

Gantt charts are named after their designer, H. Gantt, who developed the first *"Gantt chart"* in the mid 1930's.

Fig. 7 Project Planning Worksheet - Latest Start Time

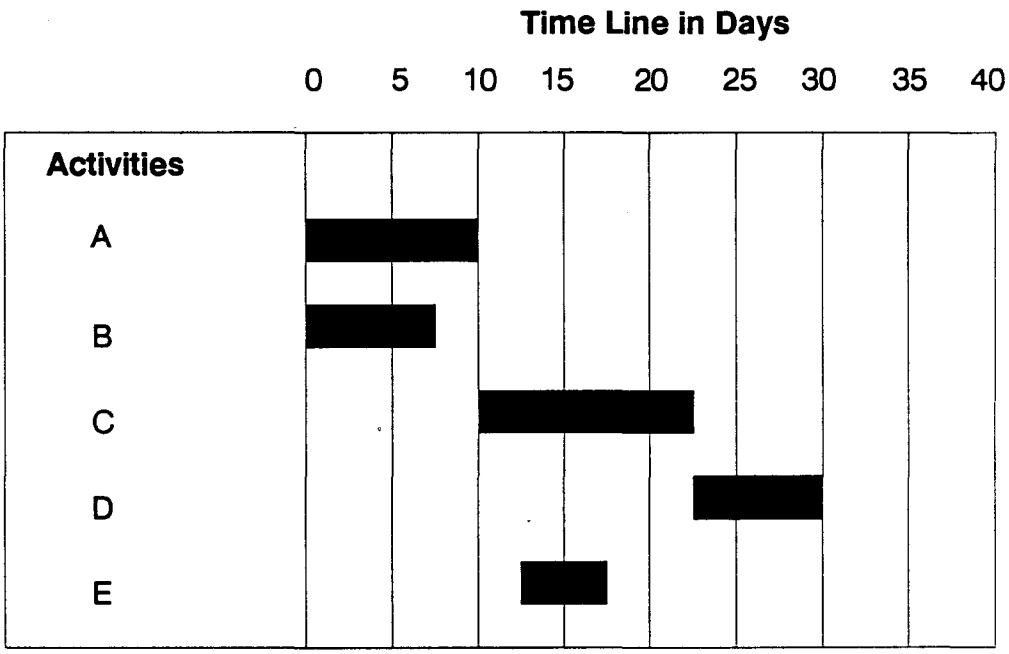


There are two types of Gantt charts:

- Two Dimensional Chart
- Three Dimensional Chart

This chart is often used at early planning stages to quickly describe how the various project activities fit together. It is also used to illustrate the sequence of activities.

Fig. 8 Two Dimensional Gantt Chart



1. Two Dimensional Chart

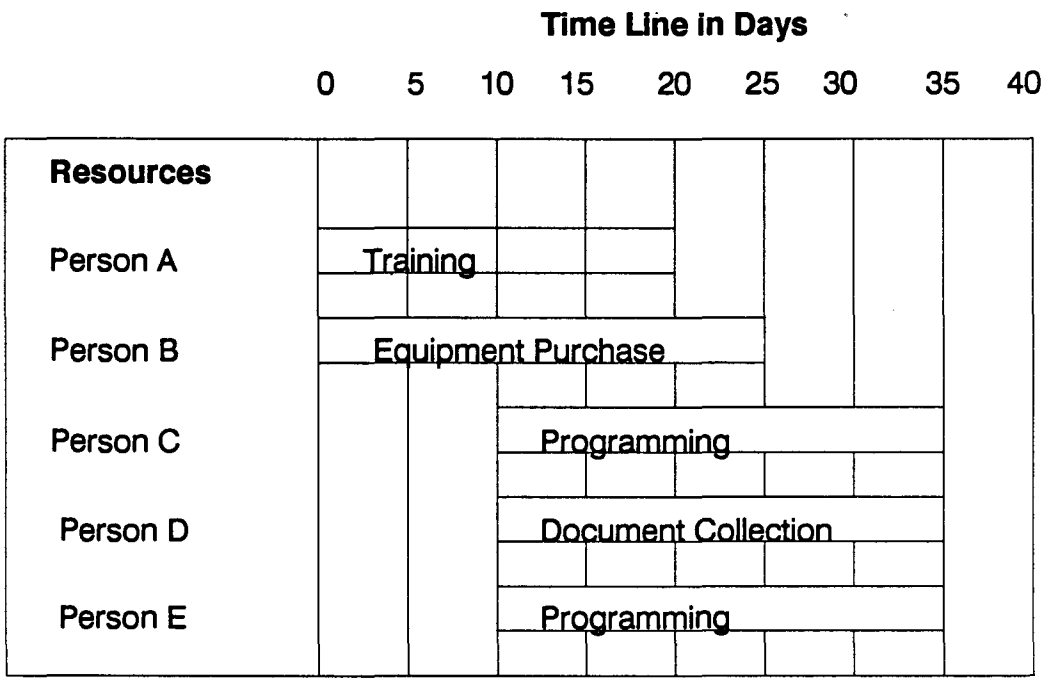
This chart provides a quick reference to the project activities and when they are to start and finish. Note, this chart does not illustrate or explain the relationships or dependencies that exist between activities. The network diagram and the critical path diagram explained earlier in this reading do that. Nor does this Gantt chart indicate the number of resources that each activity requires. It does however, show at a glance where activities are concentrated in time (i.e. when more than two activities overlap each other) and where there is a reduced amount of activity.

2. The Three Dimensional (3 D) Gantt Chart

This is called the three dimensional chart because in addition to the dimensions represented by the two axes of the graph: Time (horizontally) and Resources (vertically), it identifies the Project Activities (a third variable) for each resource and time period.

Since it is difficult to write down the name of each activity and still keep the size of the chart manageable, an activity number is usually indicated on the chart. The number refers to the list of project activities prepared when the work breakdown is prepared. (Worksheet 3).

Fig. 9 Three Dimensional Gantt Chart



Advantages of the 3D Gantt Chart for Project Management and Control

The major advantage of the 3D Gantt Chart is that it provides the manager with an outline of how each resource/person will be involved in the project. It therefore, is a very useful management tool especially when used along with a network diagram which sequences the project activities and, when the project is complex, a critical path diagram which guides the manager in resource utilization.

Here is an outline of the advantages of using a Gantt Chart for both project planning and implementation.

Advantages of 3D Gantt Charts for Project Planning

a. During the planning stage, the manager is able to determine if any of the people involved in the project are over or under utilized. For example, the manager may want to use more people and thus complete the project in a shorter time period. On the other hand, he may want to delay the completion date of several activities to make resource utilization more efficient. (We are assuming that these decisions would be made in an interactive way with the members of the project team.)

b. It is useful because it allows the manager to present the project plan to top management in a simple but effective graphic form showing how many resources are required at each step. This helps ensure that the required resources are

clearly committed to the project at the required times.

c. It illustrates the methodology used and is therefore an excellent addition to a project proposal. Providing more detail on the methodology than what is in the text of the project proposal. The chart itself can be used as a guide to write the text of the project methodology in the project proposal.

d. It facilitates the preparation of a budget. It can also be used to assure that the budget is accurate because it allows the manager to check budget amounts against activities.(Once again a network diagram or a critical path analysis will also serve this purpose. The decision will depend on the complexity of the project. The Gantt Chart is useful for straightforward projects which do not have complex relationships between activities.)

e. From IDRC's perspective, the chart summarizes project activities, budget and time frame. It allows the project officer to determine the number of resources required and to make some initial judgments about whether the resources are needed and whether the project is realistic.

f. When the project has been approved for funding, the project manager can use the chart to explain to each member of the project team what they will be required to do, when, and how these activities contribute to the overall objective. The manager is able to use the chart to negotiate a *"contract"* with each employee regarding annual leave, holidays, deadlines and so on. This process gives the employee the opportunity to discuss the plan with the manager, add suggestions, and make modifications.

Advantage of Gantt Chart for Project Implementation

a. The manager can use the chart to enter into negotiations with each member of the project team concerning the extent of their involvement in the project.

b. The manager can use the chart to monitor progress and appraise the performance of the team members.

Constructing the Chart

Before preparing a 3D Gantt chart certain elements must be in hand.

The most important is the list of activities required to achieve the stated objectives. Within Information Sciences there are different types of projects such as industrial information, factual databases, statistical information systems, agricultural extension, etc. Each of these lead to a different set of activities. Activities are further modified by the particular circumstances and location of the institution proposing the project.

Charting the Activities

The chart lists, for every responsible person , the activity in which he is involved and the period of time that he will spend on that activity. Time span is represented by the solid line extending across the time periods which are identified on the horizontal axis.

To ensure that the activities are properly sequenced, the planner must refer to the network diagram or critical path diagram developed earlier.

As the time schedule is developed ask:

- Is this realistic?
- Did I allow enough time?
- Are my assumptions realistic?

When the chart has been completed, stand back and analyze it.

- Are any of the team members overloaded?
- Is one person expected to be doing two things at once or be in two places at once?
- Are the resources being used to maximum capacity?

If there are problems there are a number of options:

- Delay one or more of the activities. (This may not be possible if the particular activity appears on the critical path).
- Recruit additional temporary or permanent employees who can do the job.
- Reassign activities to other members of the project team who have the capacity to do them.

Computer Application

There is a new software available on the market called Mac Project that is capable of providing all the management tools discussed in this section.

Fig. 10 Preparing a Gantt Chart

Exercise - Preparing a Gantt Chart

The following information is provided.

a. A list of the project activities with information about who is to complete each activity and the time that is required.

b. A list of the resources available.

c. Specific objectives for this exercise.

d. Steps to follow in preparing a Gantt chart.

e. A blank space to design your own Gantt chart.

Project Activities

Activity Number	Activity Description	Resource	Actual Time
1	* Training of Project Leader in staff motivation	P.L.	2 wks
2	* Recruiting new personnel for project	P.L.	2 wks
3	* Training on Micro CDS/ISIS	Consultant	2 wks
		All staff	2wks
		Computer	2 wks
4	* Draft an acquisition policy	Librarian	2 wks
5	* Final Project evaluation	Consultant	2 wks
6	* Select and adapt a classification and cataloguing system	Librarian	4 wks
7	* Review & approve acquisition policy and calaloguing system	P.L.	1 wk
8	* Develop a keyword list	P.L.	5 wks
		Librarian	5 wks
9	* Have a party	All staff	1 day
10	* Design the bibliographic database	P.L.	2 wks
11	* Index and Abstract documents in the library (3,500 documents at 35/wk)	Librarian	100 wks
12	* Enter references of existing documents in the database (250/wk)	Secretary	14 wks
		Computer	14 wks
13	* Index and abstract new acquisitions (500/year)	Librarian	14 wks
14	* Enter new acquisition on database	Secretary	2 wks
		Computer	2 wks
15	* Produce Bibliography	P.L.	4 wks
		Computer	2 wks
16	* Print Bibliography	P.L.	4 wks
		Printer	4 wks

Resources Available

Project Leader (P.L.) Information Scientist
Librarian (Lib) trained in industry abstracting and cataloguing
Secretary (Sec) who is computer literate
Consultant (Cons) Expert on CDS/ISIS and Information Sciences
Microcomputer (Micro) with CDS/ISIS and required supplies
Print shop (Print)

Note: Extra resources with acceptable qualifications can be easily recruited from the local market.

Objective

The objective is to print one bibliography covering the present contents of the library, at the end of the 11th month.

Procedure

1. Sequence the activities.
2. Using a pencil schedule the first activity. Mark the activity number on top of the line you have drawn and circle it.

Fig. 11 Your Own Gantt Chart

Time in months / Resource	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
P.L.																			
Librariran																			
Secretary																			
Consultant																			
Computer																			
Printer																			

PROJECT MANAGEMENT: SUMMARY OF FEATURES

Products listed in ascending price order

	InstaPlan 5000	Micro Planner for Windows	Project Scheduler 4	Harvard Project Manager	Microsoft Project for Windows	Super Project Expert	Time Line
	$495	$595	$685	$695	$695	$695	$695
INTERFACE							
Graphical user interface	❑	■ (*Windows* 3.0)	■ (proprietary)	❑	■ (*Windows* 3.0)	❑	❑
Mouse support	❑	■	■	❑	■	❑	■
Split-screen capability	■	❑	■	■	■	❑	■
On-screen Gantt manipulation	■	❑	■	■	■	■	■
On-screen PERT manipulation	■	■	■	■	■	■	■
CHART TYPES							
Gantt	■	■	■	■	■	■	■
PERT	■	■	■	■	■	■	■
Baseline vs. actual Gantt	■	■	■	❑	■	■	■
Work-breakdown structure	❑	❑	❑	■	■	■	■
Time-scaled network	■	❑	❑	■	❑	❑	■
Resource histograms	■	■	■	■	■	■	■
Cost bar chart/curves (BCWS, BCWP)	■	■	■	■	❑	❑	❑
NETWORKING							
Network version or LAN pack available	❑	■	❑	❑	■	■	■
File-locking capabilities	N/A	Read-only	N/A	N/A	■	■	■
Password support	N/A	❑	N/A	N/A	■	■	❑
Query while file is locked	N/A	■	N/A	N/A	■	■	■
MEMORY UTILIZATION							
Extended-memory support	❑	❑	❑	■	■	■	■
Expanded-memory support	■	❑	■	■	■	■	■
Virtual memory via disk swapping	❑	❑	❑	❑	■	❑	■
Amount of hard disk space needed	1.4MB	720K	1.1MB	1.7MB	2.0MB	1MB	5MB
HARDWARE SUPPORT							
Disk space required for all functionality with one printer driver loaded	1.4MB	720K	1.1MB	1.7MB	3.0MB	1.2MB	5MB
PostScript or PCL5 support	❑	■	■	❑	■	❑	■
Number of printers supported	80	140	22	30	190	150	Unlimited
Plotter support	❑	■	■	■	■	■	■
Film-recorder support	❑	❑	❑	❑	❑	❑	■
ORGANIZATIONAL TOOLS							
Outline structure:	■	❑	❑	■	■	■	■
Number of levels	11	N/A	N/A	99	5	9	Unlimited
Zoom on PERT chart:	❑	■	■	■	■	■	■
Number of levels	N/A	1	5	3	5	4	Unlimited
Support for WBS codes:	❑	❑	■	■	■	■	■
Number of characters in field	N/A	N/A	10	12	80	16	30
Support for OBS codes:	❑	❑	■	❑	■	■	■
Number of characters in field	N/A	N/A	10	N/A	80	6	30
Provides filter histogram for each level of resource outline	■	■	■	❑	■	■	❑
Priorities on projects	■	❑	❑	■	❑	■	■
CUSTOMIZATION TOOLS							
Project log	■	❑	❑	❑	■	❑	■
Task and/or resource notes	■	❑	■	■	■	■	■
Scripting language available	❑	❑	❑	❑	❑	❑	■
Macro recording available	❑	❑	❑	❑	■ (Windows 3.0)	■	■
TASK MANAGEMENT							
Maximum number of tasks per project	16,000	1,364	2,000	280	2,000	1,200 in DOS, 2,800 in EMS, 27,000 in OS/2	Limited by RAM
Maximum number of tasks overall	16,000	1,364	Limited by RAM	Limited by RAM	2,000	32,000	Limited by RAM
TASK DURATIONS							
Minutes	❑	❑	■	■	■	❑	■
Hours	■	❑	■	■	■	■	■

—Editor's Choice ■—Yes ❑—No
N/A—Not applicable, product does not have this feature

CONTINUES

	InstaPlan 5000	Micro Planner for Windows	Project Scheduler 4	Harvard Project Manager	Microsoft Project for Windows	Super Project Expert	Time Line
TASK DURATIONS							
Days	■	■	■	■	■	■	■
Weeks	■	■	■	■	■	■	■
Months	■	❑	■	■	❑	❑	■
Years	■	❑	❑	■	❑	❑	❑
Schedule rules:							
As soon as possible	■	■	■	■	■	■	■
As late as possible	■	■	■	■	■	■	■
Fixed date	■	■	■	■	■	■	■
Task priorities	■	❑	❑	❑	■	■	■
MODELING							
Start to finish	❑	■	❑	■	■	❑	■
Finish to start	■	■	■	■	■	■	■
Start to start	■	■	■	■	■	■	■
Finish to finish	❑	■	■	■	■	■	■
Lags between tasks	■	■	■	■	■	■	■
Negative lag (lead time)	❑	■	■	■	■	■	■
Dependencies:							
Set on Gantt chart	■	❑	■	■	■	■	■
Set on PERT chart	■	■	■	■	■	■	■
Show all in current task	■	■	■	■	■	■	■
RESOURCE MANAGEMENT							
Maximum number of resources per project	16,000	26	500	200	2,000	Unlimited	300
Maximum number of resources per task	16,000	20	Unlimited	200	20	Unlimited	24
Resource-driven scheduling	■	■	■	■	■	■	■
Cross-project resource leveling	■	■	■	■	■	■	■
Resource calendar	■	❑	■	■	■	■	❑
Resource smoothing	■	❑	❑	❑	❑	■	■
Cost codes	❑	❑	■	❑	■	■	■
TRACKING FEATURES							
Baseline comparison (time)	■	■	■	■	■	■	■
Baseline comparison (cost)	■	❑	■	■	■	■	■
Percent complete (time)	■	■	■	❑	■	■	■
Percent complete (cost)	Reports only	❑	■	■ (calculated)	■	❑	■
Percent complete (work)	■	❑	❑	■	■	■	■
Earned-value analysis	■	❑	■	■	■	■	■
Estimates of end date	■	■	■	■	■	■	■
Estimates of end cost	■	■	■	■	■	■	■
REPORTS							
Cross-tab reports	■	❑	■	❑	■	■	■
Variance reports	■	❑	■	■	■	■	■
Number of graphic reports	4	3	4	10	3	5	4
Number of data reports	4	7	9	14	18	22	10
Status report for each worker by task	■	❑	■	■	■	■	■
Spacing control	❑	❑	❑	❑	■	■ (Notes only)	■
Margin control	■	❑	❑	❑	■	■ (Notes only)	■
Visible page breaks before printing	■	■	❑	❑	❑	■	■
Adjustable page breaks	❑	❑	❑	❑	❑	❑	■
Font control	❑	■	❑	❑	■	❑	❑
Mixed fonts	❑	❑	❑	❑	■	❑	❑
Customizable legend	■	❑	❑	❑	■	❑	■
FILE IMPORT/EXPORT							
ASCII	■ / ■	■ / ■	■ / ■	❑ / ■	■ / ■	■ / ■	■ / ■
.DBF	❑ / ■	❑ / ❑	■ / ■	■ / ■	■ / ■	■ / ■	■ / ■
.XLS	❑ / ❑	❑ / ❑	❑ / ❑	❑ / ❑	■ / ■	❑ / ❑	■ / ■
.WK1	❑ / ■	❑ / ❑	■ / ■	■ / ■	■ / ■	■ / ■	■ / ■
HELP							
Context-sensitive help	■	❑	■	■	■	■	■
On-line tutorial	❑	❑	■	■	■	■	■
Number of undos	1	1	1	None	1	None	999

—Editor's Choice ■—Yes ❑—No

ENDS

Planning the Management of Equipment and Capital Resources

Introduction

Equipment and supplies represent a large investment. For some projects it represents more than 25% of the total project budget. Because inappropriate or faulty equipment can cause delays in project activities and affect the quality of services offered, particular attention should be paid during the project planning phase to selecting and purchasing appropriate equipment. In addition, serious consideration should be given to the management of capital equipment. This involves careful equipment selection and effective implementation of a preventive maintenance program.

It is not IDRC policy to select, purchase, install or maintain equipment. Recipients are responsible for the management of all capital equipment required by their projects. Project managers are free to select equipment of their choice. This choice should be based on expediency, appropriateness and context.

The ability to order, install, operate, maintain and repair equipment is important in terms of building institutional capacity. If responsibility for equipment and capital resources is left to an outside agency, the recipient will lose valuable *"hands on"* contact with the delivery mechanism and project methodologies.

Thus although IDRC sometimes administers certain project components, one of which may be the purchase of equipment, IDRC usually gets involved only at the recipient's request. These requests are often made to IDRC due to problems in obtaining foreign corrency on the part of the recipients. In this case, clear directions must be provided to the Centre.

Selection and Purchase

Following are some of the factors to be considered when selecting equipment.

Specifications

Equipment is required to perform specific tasks related to obtaining project objectives. These tasks are clearly defined in the project summary. It is not the equipment that counts, it is the output it produces. Therefore, it is impor-

tant to specify exactly what is required from each piece of equipment in terms of methodology to be followed and results expected. It is therefore important to consider the use of equipment in the context of the social environment. For example, the effective use of microcomputers depends on the software and how it is applied. Choice of software should be considered before hardware, and should be selected based on compatability with equipment being used by the host institution as well as at national and regional levels.

Costs

The cost of equipment represents only one factor that has to be taken into consideration at the time of purchase. Total costs consist of:

- Acquisition.
- Installation (including wiring).
- Maintenance.
- Cost of producing the output.
- Cost of supplies.
- Training.
- Operational (staff time, etc).

Other Factors

Repair costs are difficult to estimate but if a service contract is negotiated the institution is able to prepare an accurate repair and maintenance budget.

Other factors to be considered when purchasing equipment are:

- Local availability.
- Useful lifetime (of parts as well as equipment as a unit).
- Ease of operation (in relation to training and operational requirements).
- Obsolescence.
- Availability of spare parts and service.
- Equipment capacity.
- Reliability of equipment.

Standardization

When purchasing several pieces of equipment it is often wise to deal with only one manufacturer. Lack of uniformity could mean additional expense, additional administration and extra training. Whenever possible, purchase equipment similar to that already in use.

Standardization can also be attained at the national level through resource sharing. This is important when there is no local equipment dealer. National institutions can then pool spare parts, share in training, and reduce the costs of maintenance.

Preventive Maintenance

Preventive maintenance is necessary to counteract deterioration and reduce equipment failures. However, a good maintenance program requires good management.

Maintaining a spare parts inventory requires a systems approach. While it is obvious that the light bulb used in a microfiche reader-printer will eventually burn out, it should be planned for. It is less obvious when a motor will break down or when a bearing will wear out and the size of the spare parts inventory should depend on how quickly the part can be obtained, how expensive it is and how often it has to be replaced.

When there are no local distributors or suppliers, the best solution is to keep a stock of *"consumable"* spare parts and to develop, at the time of the equipment purchase, a plan of action to obtain replacement parts.

Another alternative is to train a local technician. At the very least, staff should be trained in proper maintenance procedures. Equipment,

if correctly used and adequately maintained, will break down less often than equipment that is not maintained.

Repairs

When equipment breaks down, the repair process involves:

- Identifying the problem.
- Identifying and removing the broken part.
- Identifying a supplier.
- Ordering.
- Replacement.
- Correct installation.

Troubleshooting

When major problems arise it maybe necessary to obtain specialist help. Before seeking help outside the country, a careful search should be conducted nationally. Possible sources are the National Bureau of Standards, professors and university students in departments of electronics or mechanics and technicians from other scientific institutions. In the case of microcomputers, for instance, the advice of local users group might be sought when available.

Many projects use equipment that was given to the institution by donors often without plans being made for its repair and maintenance. If this equipment is still useful, it should be examined to see if it can be brought back into service and used in the project.

Conclusion

A good capital equipment management plan involves:

- Ensuring that equipment is appropriate to project outputs.
- Attempting to acquire resources locally.
- Including maintenance contracts when possible.
- Providing training in equipment operation.
- Providing repair and maintenance training.

The Information Sciences Division is aware that dependable and reliable equipment is necessary in order to realize project objectives. In this regard, a training workshop was held in October 1988 on the maintenance and operation of microfilm equipment. Other projects concerning repair and maintenance of equipment may be developed.

SECTION IV

Project Sustainability

Project Sustainability

Project sustainability is concerned with continuity of the activities to provide the services promised to a community of users. Depending on the nature of the project it is normal to assume that the project should last for as long as there is a need for its services and products.

The Sustainability of information projects in the final analysis depends on the following factors which should be given consideration.

1. The conviction by the parent organisation that information is a valuable asset in that it can be used in many ways e.g. aiding in the decision making process, providing alternatives in the problem solving process, reducing uncertainty etc.

2. Financial and other support from the management of the parent organisation.

3. An understanding that the major objective of all information projects is to serve its users existing and potential. This implies that there must be a strong user-oriented attitude and bias in the design and planning of products and services.

4. Products and services must be designed to reflect user needs, which have to be determined on a continuing basis. This pre-supposes that users have been identified and appropriately segmented so as to suit products and services for different users in each segment. A constant interaction with users is a necessity.

5. Marketing and promotion of services should be effectively carried out to create awareness and encourage use of the products and services.

6. Good management practices as applied to the Planning, implementation and ongoing operation of the project is essential if services are to be operated efficiently.

7. Resource sharing and co-operation on a national and international basis are essential in the effective transfer and access to information.

8. Self reliant attitudes in making the most of limited available resources and utilizing inherent innovative skills builds confidence. This further adds to the morale and effectiveness of the services offered.

An elaboration follows on some aspects of sustainability.

Networking and Twinning among Information Project Managers

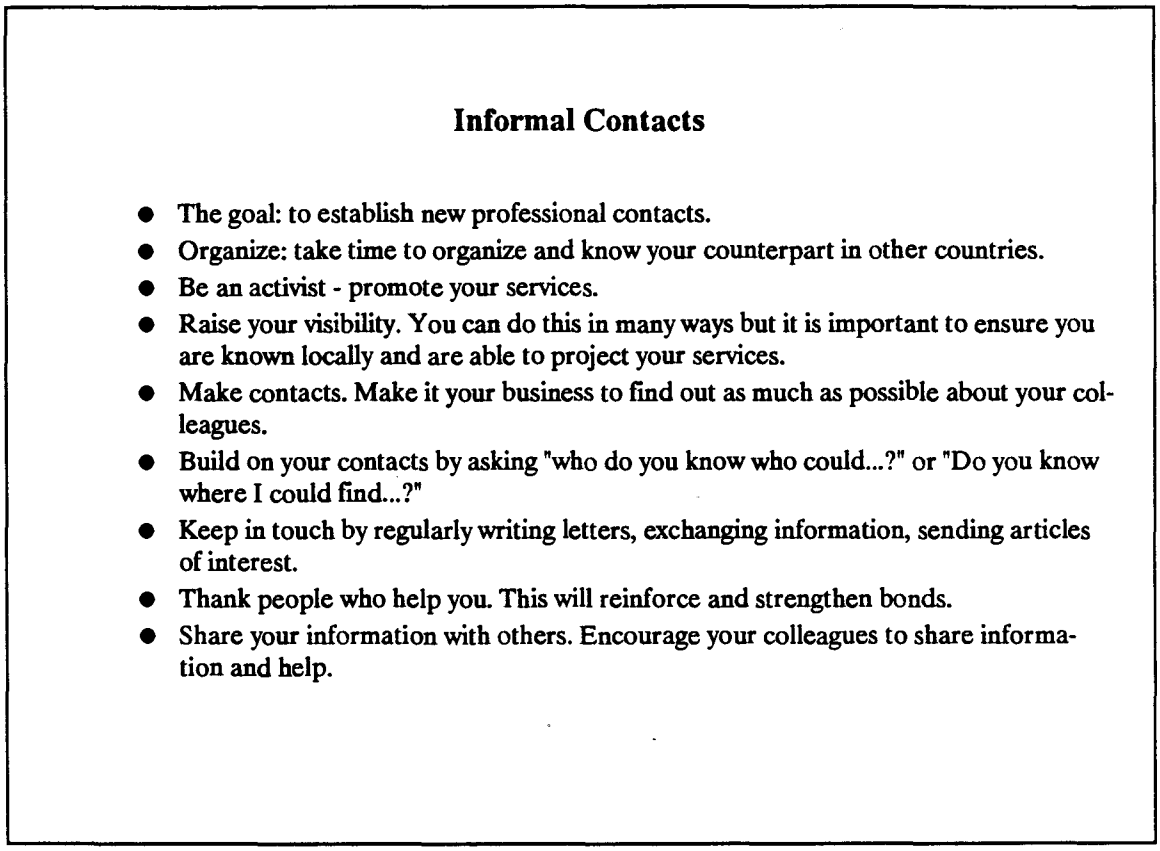
It is realized that there is a great wealth of expertise in the projects funded by IDRC. From time to time we have been able to call on this expertise to help other projects. In order to build on this capacity for self-help, we intend to strengthen all projects by linking them in some way. Three types of networking activities are encouraged: informal contacts, participatory links and formal links through "twinning". (See Fig. 1).

Informal contacts are a powerful source of information and have been called the "invisible college". The opportunity to develop through informal contacts ones own invisible college by correspondence through exchange visits and now computer networking should be encouraged. Recent studies have shown researchers tend where possible to rely on such means of communication much more heavily than libraries or other sources (See Fig. 5). Any new idea or method that is proven to work well quickly becomes known throughout the core group, whilst those on the periphery must wait months until there is a formal publication.

Developing country researchers have traditionally found it most difficult to foster informal contacts of this type. Modern communication methods now makes this form of contact much easier to attain, especially through the auspices of IDRC supported projects. Over the years a great deal of such personal contact has been established. Each project manager can try to build existing and future contacts and become part of a growing family of similar projects. Individually the project will not be expected to achieve as much as a group of projects can. In unity there is strength.

More recently, research on the social aspects of information transfer has identified key individuals, referred to as gatekeepers, whereby these individuals perform a valuable information function by being consulted by their peers and others over a wide range of issues. It is our experience that this has been the case with many key individuals in IDRC supported projects.

Fig. 1 Informal Contacts



There are many ways informal contacts can be fostered amongst project managers. One suggestion has been regular, regional meetings of groups of projects, the other has been the publication of a newsletter, but most of all, basic correspondence is seen as desirable.

Participatory Links

IDRC also tries to encourage the development of direct partnerships between projects with similar objectives but who are:

- Located in different regions or countries.
- At different stages of development.
- In a position to help another project because of solid resources, good methodology, skilled personnel, or excellent project outputs.

The Process

Project managers make the initial decisions about which projects can be linked based on the above criteria. When project managers meet for the first time, they need to know:

- Project objectives.
- The planning process.
- The methodology.
- The resources applied to objectives.
- Problems encountered.

Participating links are also informal means by which project managers can mutually exchange information and know-how but not necessarily working on the same problem. The project, for instance, may have gained vulnerable expertise in computer technology or may have developed special marketing skills. Such information can be shared by passing information between project managers. IDRC is the link.

More formal linking arrangements can result in the "twinning" of projects. This is most beneficial where two projects are working on the same problem or a similar set of issues but are geographically distant. Several STI projects have been twinned as a result of earlier initiatives. Twinning has the advantage of strengthening each project, providing a self-monitoring tool, building on commonalities, resolving mutual problems through co-operation. South-South collaboration is strengthened. IDRC assists by:

- Focusing on issues of common interest.
- Helping project managers recognize the need to exchange information.
- Encouraging project managers to contribute so that they in turn could gain from the information others had to share.
- Encouraging suitable project managers to participate.
- Encouraging others to share their expertise.

Fig. 2 Linking Arrangements

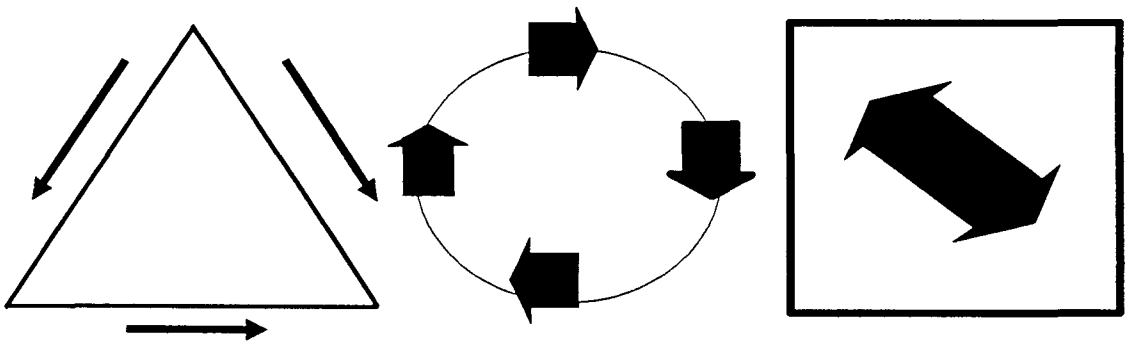


Fig. 3 Hands on Experience

Hands-On Experience

We'd never have made it to the moon without a spirit of interdependence, and we'd never have eradicated typhoid, small-pox, and polio without cooperative effort. We have found that we are becoming increasingly interdependent -- not only in our country, but also all around the world. Helping each other to solve problems, knowing that you have a colleague elsewhere doing similar work, is a source of strength. This is what we mean by "Twinning". It means developing our own professional network.

Fig. 4 Action Plans

Preparing A Twinning Action Plan

1. Prepare an Action Plan to help managers:
   - Individually.
   - Through institutional cooperation.
   - Through networking.
   - Through south/south cooperation.
   - Through information exchanges.

2. Identify Individual Project Strengths and Weaknesses.
   - What have you done well?
   - What do you need help with?

3. Identify Problems.
   - Individual management problems.
   - Project problems.
   - Mutual problems.
   - Institutional problems.
   - Common areas of concern.

4. Suggest Solutions.
   - Share experiences.
   - Use individual experiences to reach a novel or unique solution.

5. Consider Exploring these Areas.
   - Building more effective work teams.
   - Managing your time more effectively.
   - Meeting schedules and specifications.
   - Solving technical problems.
   - Meeting training needs and priorities.
   - Networking, information exchanges and south/south cooperation.

Selected Twinning Action Plans

Following are two examples of the action plans developed during the Twinning exercises.

1. Natural Resources and Environmental Information

The members of the Earth and Marine Science Group met to find their mutual interests and identify areas where they could support and assist each other in the project. Three major issues were considered for action plans.

Issue No. 1

How to increase the usefulness of the project experiences and outputs, not only locally but also among the countries.

Plan of Action

- *Exchange of information - RIC, SEAWIC and INFIS agreed to assist each other in the acquisition of literature relevant to their specific needs, eg. rattan, aquaculture.*
- *Exchange of accession lists, project reports and other institutional resources among fisheries projects (INFIS, FIMIS, SEAWEED and In-shore Fisheries Information System).*
- *FIMIS will look into the possibility of using E-mail (Science-net) for the exchange of information among the fisheries projects. It was* suggested that other projects should consider joining.
- *ADAP will provide data input sheets to SEAWIC.*

Issue No. 2

How to increase effectiveness on the dissemination of STI in support of each other.

Plan of Action

- *Each member of the Earth and Marine Sciences goup agreed to be a contact person and act as a referral point for information required from his/her country.*

Issue No. 3

Improve the professional skills of the people who are responsible in information handling/management.

Plan of Action

- *To explore the possibilities of conducting specific training courses either in the country or at the regional level. Training areas should cover:*
  - *Information Science and library management.*
  - *Computer management for system analysts and programmers.*
  - *Project design and planning, personnel management and evaluation.*

2. Twinning Two Fisheries Information Projects:

In-shore Fisheries Information System (Chile) and Fisheries Management Information System (Trinidad and Tobago).

Objective

The objective of the twinning exercise was to establish formal and defined linkages between the two projects to allow each to learn from the experience and development of each project and executing institutions.

Rationale

Both projects address the same sectoral problem in Chile and Trinidad & Tobago - that of providing a decision-support system for the central government to monitor and analyze developments in marine fisheries in a timely, rational and efficient manner for the ultimate benefits of the fishing communities.

Both projects will improve the marine fisheries management capabilities of their respective institutions and will develop systems through a series of similar activities. The projects share common procedures, investigations, information and reviews. They will output similar products and overall system design.

Establishing Communication

Both executing institutions (Instituto de Fomento Pesquero, Chile and the Fisheries Division, Ministry of Agriculture, Trinidad) will be linked electronically through the electronic mail network system SCIENCE.NET. This will alow access to many international institutional nodes that can support the project's activities ie. ICLARM, University of Miami, IAMSLIC as well as IDRC (Ottawa) to facilitate monitoring and information access and retrieval. Particular attention will be paid to sourcing documents/information that address system design aspects.

Through personal contacts (telephone and mail) the progress of project activities will be monitored on a regular basis and experiences shared. The institutional linkages of each institution will be utilized to provide complementary strengths ie. the Latin American and Pacific contacts of IFOP, and the Caribbean and Central Western Atlantic contacts of the Fisheries Division. In this way the information resources of continental North, Central and South America will be utilized.

Information Exchanges

On a regular and continuing basis information sources feeding each project will be exchanged. These include library accession lists from each institution, literature searches, software listings (commercial and customized), and accumulated references from each institution relating to system design and marine fisheries management.

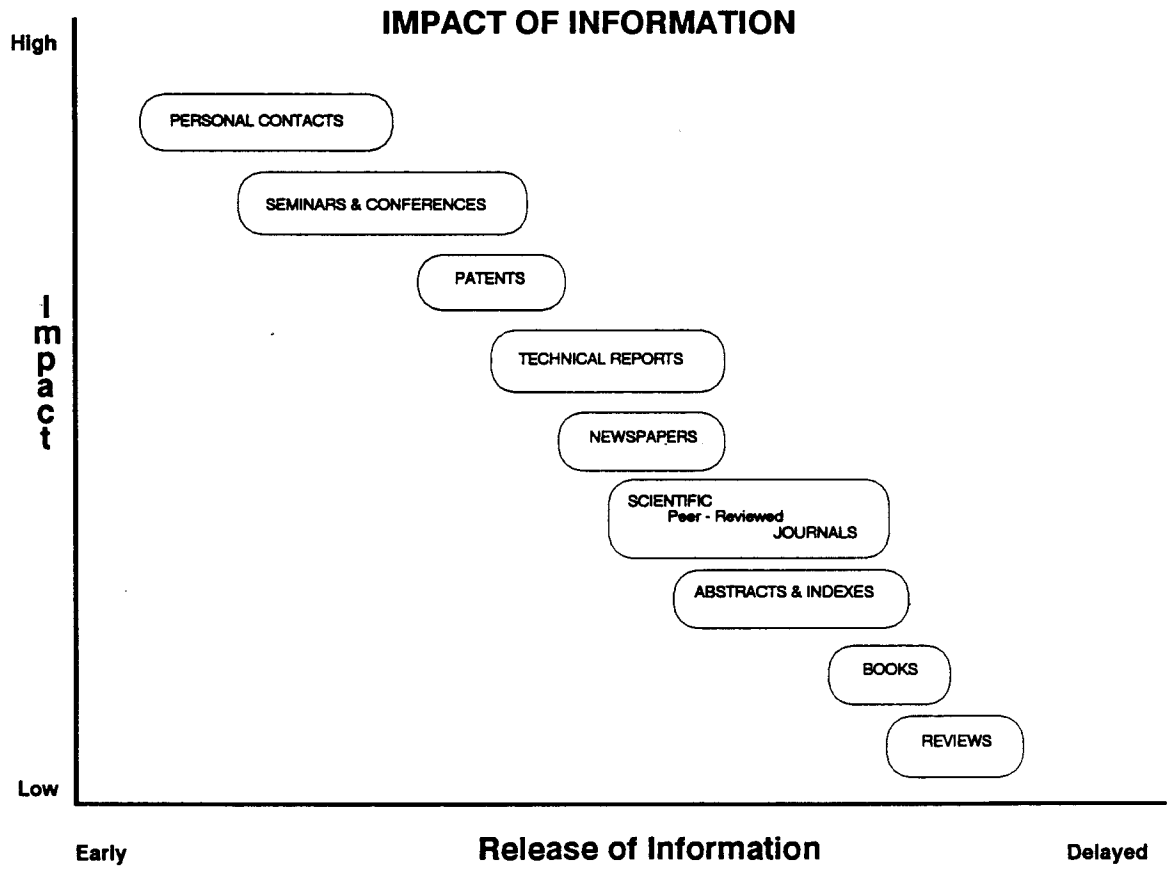
Products from each project will be exchanged. These include forms utilized, manuals produced, and promotional materials, reports of study tours, formats of reports prepared by system analysis and project staff and computer programmes developed for data capture, validation, organization, analysis and report generation.

Prepared by:

H. Robotham V.

B. Fabres

Fig. 5 Impact


IMPACT OF INFORMATION
High
Low
Impact
PERSONAL CONTACTS
SEMINARS & CONFERENCES
PATENTS
TECHNICAL REPORTS
NEWSPAPERS
SCIENTIFIC
Peer - Reviewed
JOURNALS
ABSTRACTS & INDEXES
BOOKS
REVIEWS
Early
Release of Information
Delayed

Delivery of Project Outputs

The Concept of Information Resources

Information has been defined as ideas, knowledge or something that can be communicated and has the potential to inform. Information is collected, stored, processed, analyzed, and disseminated through various methods and media. Generally speaking, an information project has the broad goal of ensuring wide and efficient access to information for a well defined target group or user community.

Projects outputs are the products or results of the project with which the user interacts. The extent to which the outputs meet user needs determines the extent to which the information project is able to meet its objectives. For the purposes of this paper, the concept of outputs is not restricted to the physical outputs, but encompasses the broad range of information resources. These include both information sources, i.e. holdings, as well as information handling methods, media and systems. Here, one must realize that having the right information at the right time, in the right form, at the right cost, can only be realized to the extent the available information resource base permits. Typical outputs of information projects are listed in Fig. 1.

Information Resources Building

The building of information resources starts with a good understanding of the business that the project is in, i.e. the context within which the project is carried out. The kind of resources to be built and methods employed in building the resources are determined and influenced by the context. Thus the process of information resources building begins with:

- Understanding the parent institution - its mandate/mission, goals and objectives, priorities and resources, as well as socio-economic, cultural and the political environment in which it operates.
- Understanding the parent institution's programs and activities.
- Identification of target or user groups.
- Analysis of the information needs of the target or user group both for contents and for the determination of media to be used.
- Inventory of available information resources, both internal and external to

Fig. 1 Examples of Outputs of Information Projects

Information Sources

- Accession lists, contents pages, etc.
- Bibliographies.
- Directories and Inventories of institutions, experts, equipment, resources, etc.
- Databases of bibliographic, numeric and factual information.
- Extension materials, Information sheets, etc.
- Films, slides, audio tapes and videotapes.
- Literature reviews.
- Maps.
- Microfiches, films.
- News articles, announcements.
- Newsletters, journals and books.
- Proceedings of meetings.
- Reports on trends.
- State-of-the-art reviews.

Information Services

- Analysis.
- Current awareness, including selective dissemination of information.
- Document delivery.
- Packaging and repackaging.
- Professional advice.
- Question and answer.
- Referral.
- Training.
- Translation.

Information Systems

- Bibliographic and data systems.
- Networks at national, regional and global level.
- Software packages.

the institution in order to identify an unfullfilled need.

The next step in the resource building process is the determination and analysis of user needs. The major reason given for the under-utilization of project outputs is that the information contents and media used do not respond to user requirements. These requirements/needs are generally determined/influenced by organizational, motivational and psychological factors related to the user as well as other factors such as the research phase, amount of information already available, and the rate of development taking place in a given field i.e. rate of new information generated. Thus, designing project outputs should begin with an analysis of user requirements. One way of undertaking this analysis could be by answering the five Ws and one H. That is by asking:

- Who are the users of the information?
- What information do they use?
- Why do they use what they use?
- Where do they use the information?
- When do they use the information?
- How do they use the information?

Answers to these questions will help determine appropriate information contents and the media to be used. Furthermore, the nature and characteristics of each output must be understood and determined. For example, analytical reports would be an appropriate output for policy makers who need to be informed on current trends. Information sheets explaining the "how-to's" would be useful for extension workers who need to make effective demonstrations in the field. Literature reviews would be valued by scientists who need to design a new research project.

Design of Project Outputs

Good project outputs that satisfy user requirements have high quality and utility value. Some of the factors that contribute to the quality and utility of project outputs are shown in Fig. 2.

Fig. 2 Factors Affecting Quality and Utility

- Accuracy.
- Accessibility, both intellectual and physical.
- Comprehensiveness.
- Adaptability.
- Affordability/Cost effectiveness.
- Credibility.
- Browsability.
- Currency.
- Ease of use.
- Relevance.
- Reproducibility.
- Reliability.
- Stability and durability.
- Validity.
- Selectivity.
- Timeliness.

An Example: The Newsletter

In the following paragraphs, the application of some of the elements described earlier are examined using a newsletter as an example.

The strength of the newsletter lies in its simplicity - simple in design, simple in format and simple in writing. It is easy to produce short, easy to read and provides timely information to the specific target group. The factors that should be taken into consideration in the design of a newsletter are:

- Nature of field to be covered.
- Purpose of the message e.g. teach, inform, announce, advertise,
- Characteristics of users.

These in turn will determine:

- Frequency.
- Size and length.
- Contents which should be accurate, current relevant and selective.
- Format and lay-out which should be simple, clear, easy to read and attractive.

The result will be a simple, relatively short, compact information product that gives items of news that are current and relevant to readers and that will attract and hold the readers interest/attention while conveying the message.

Conclusion

The project outputs should be designed to meet current as well as future needs. In order to sustain the quality and utility of the project outputs, the project manager must continuously assess the feedback, identify areas for improvement, areas of strength and weakness and the relative advantage of specific outputs over other information resources. In doing so, consideration should be given to elements that are subject to change such as user requirements, the environment under which the parent institution operates and the goals, objectives and resources of the institutions.

Finally, it must be borne in mind, that the project manager is accountable for the quality of the project outputs which in turn determine the success of the project in meeting its objectives.

Promotion of Project Outputs

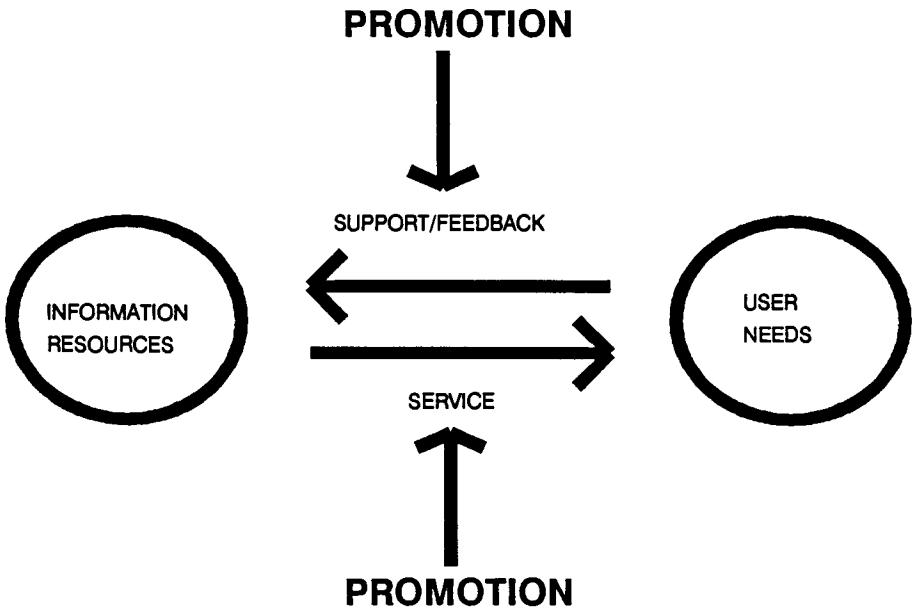
The principal goal of most Information Sciences projects is *to provide and disseminate information to a defined user community.* That is, information is collected, organized, analyzed and packaged for a specific use. The achievement of project goals is linked directly to the extent to which the projects outputs meet the specified user needs.

Although most project managers feel their project outputs meet users' needs, indications are that utilization of the subject output could be improved.

Developing a Promotion Strategy

Promotion may be defined as a *planned activity to identify, attract, service and gain support of user groups in a manner that advances the goals*

Fig. 1 Promotion of Information Services



and objectives of the information project and the parent institution.

Successful promotion requires a carefully formulated strategy. Strategy development should include the following steps:

1. **Intelligence Gathering.**
Reliable and timely information is essential for launching promotional programs. Information must be gathered about characteristics of current and potential users, adequacy of information sources, needs that are not presently being met, the institutional environment, priorities, existing resources, ability of the staff, etc.

2. **Selection of a Target Group.**
It is important to have an accurate description and clear understanding of the current and potential users. Design of outputs and selection of promotional methods depend on the target.

Fig. 2 Quality and Utility of Project Outputs

3. **Design and Development of Outputs.**
No promotional methods will help unless the project outputs have the quality and utility that satisfy user requirements.

4. **Promoting the Outputs.**
Good communication is key in informing and educating users. When selecting the promotion and communication strategy consideration should be given to socio-ethnic factors, institutional environment and of course, the target group.

5. **Developing a Strong Relationship with the User.**
A strong support network throughout institution and user groups should be developed and maintained.

Quality and Utility Considerations

1. Improved quality and utility encourage use of information.

2. Ignoring the quality and utility issue is tantamount to project suicide.

3. High quality and utility are powerful ingredients in a successful competitive strategy.

4. Promote only that which you can deliver.

Encouraging Information Use

User's satisfaction with the product is determined by expectations. If the project outputs exceed their expectations they are satisfied. If the product does not meet expectations they are dissatisfied.

Meeting and exceeding expectations means providing a information service that is:

- Relevant.
- Timely.
- Easily accessible.
- Easy to use.
- Approachable.
- Reassuring.

To encourage use of project outputs, special attention must be paid to presentation and should offer:

- A response to user problems.
- Balanced coverage.
- A professional approach, including professional discretion and confidentiality.
- Reliability.
- User training.
- User feedback.

In addition, it should go beyond in-house information sources and offer a reference and collaboration service with other experts and other information sources.

Communication

Both written and oral communication methods can be used to promote information services and products.

Examples of written promotional methods include:

- Contributions to newsletters and bulletin boards that reach the target group.
- Reports on special topics, project status reports, and annual reports.
- Information packages about services and products being offered.
- Contributions made to professional journals/publications.
- Newspaper announcements.
- Exhibits.

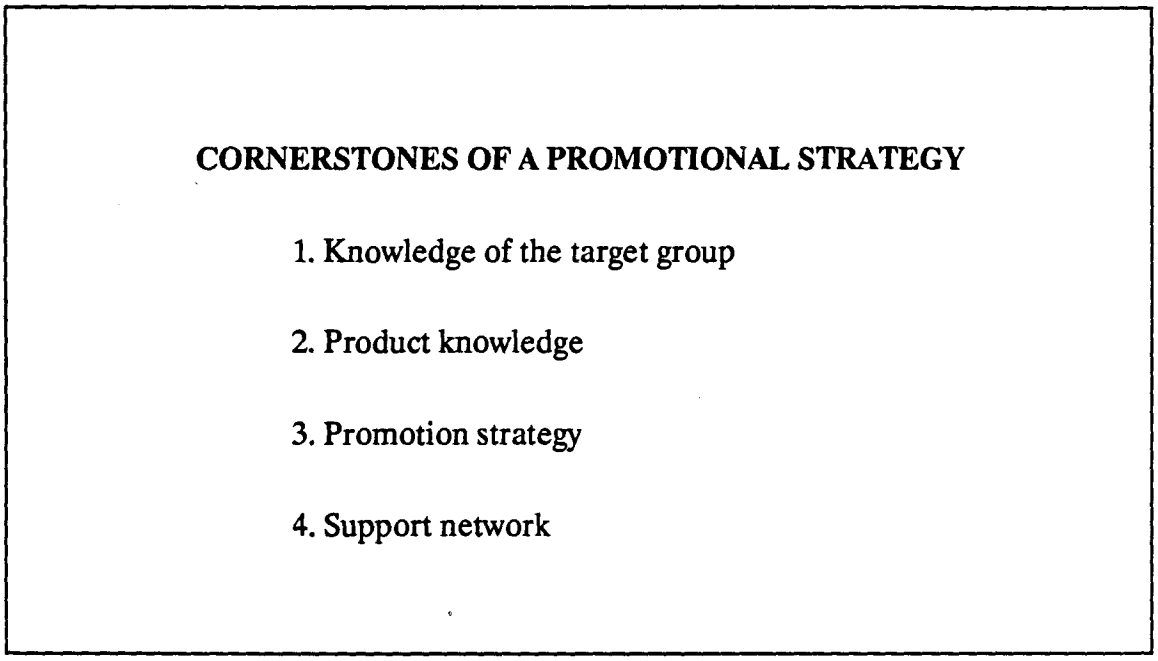
Examples of oral communication that effectively promotes outputs include:

- Holding meetings with staff and/or users.
- Meetings with staff and/or users.
- Conducting seminars and lectures. Two examples are: orientation seminars for new employees and seminars designed to provide information to the user group.
- Organizing an "*Open*" house which could include demonstrations, orientation tours, etc.
- Presentations at professional meetings.
- Visits to user institutions.
- Announcements made over radio or television.

While any of these methods can be used in promoting the project outputs, their effectiveness depends on such factors as socio-ethnic and institutional environment and characteristics of the target group.

In conclusion, as noted earlier, satisfaction is the underlying factor that encourages the use of information. Promotion therefore, should begin with quality outputs that not only meet the user needs, but also exceeds their expectations. This means that only those outputs that can be delivered should be promoted. Promoting something that can not be delivered quickly destroys credibility.

Fig. 3 Successful Promotion



SECTION V

Evaluation

Project Evaluation

Evaluation Worksheet

The last step in our four phase Project Management Process is Evaluation. Refer to worksheet number 5. Note that it allows you to do an *"Overall Evaluation"*, an *"Implementation Evaluation", and on the reverse side it considers special ques*tions that the key stakeholders will likely have about your project. Let's look at each part separately.

Overall Evaluation

For the overall evaluation we go back to the idea that a project is designed to respond to a problem that is represented by a *"gap"*. This time however, we focus on the gap between where we had planned to be and where we actually are, now that the project is over.

If there is no *"gap"*, the worksheet directs you to questions that focus on what was learned from the project.

If the *"gap"* still exists, the worksheet directs you to questions that will lead to the next action or project.

Implementation Evaluation

An Implementation Evaluation simply focuses on planned costs, actual costs and any major deviations from plan.

Special Evaluation Questions

The reverse side of the worksheet is designed to help you consider evaluation at the beginning of the project rather than just at the end. Plan the evaluation and try to make it a useful part of the project.

This approach to project evaluation assumes that results will be analyzed and then considered when the next project is being planned. Unfortunately, this kind of evaluation is rare. Most evaluations are done because it is required by the funding agency.

What is a Good Evaluation?

A good evaluation is one that *gives us useful answers to the important questions that we have about our projects.* There are some very important points to consider in the above statement.

WORKSHEET #5 — Evaluation Worksheet

(the purpose of evaluation is to answer important questions that key people have about your project. At the end of a project, the key questions are concerned with whether or not the "problem" is resolved

OVERALL EVALUATION

Project End State
where are we now? (at the end of the project)
Current Date _____

What data do you have to support the above description? _____

GAP

Is there a gap?

[ ] YES - is it significant? _____

- is it worth working on? _____

[ ] NO - what have you learned? _____

- what will you do to pass your learnings to others? _____

- how will you use your learning or other projects _____

What was the goal or desired state?
Where had we planned to be?? at this time? (when we started the project?) (See worksheet #1)
Target Completion Date _____

IMPLEMENTATION EVALUATION

Summarize planned costs

step one:			
		$	
		$	
		$	$
step two:			
		$	
		$	
		$	$
step three:			
		$	
		$	
		$	$
step four:			
		$	
		$	
		$	$
step five:			
		$	
		$	
		$	$
step six:			
		$	
		$	
		$	$
			$

Summarize actual costs

step one:			
		$	
		$	
		$	$
step two:			
		$	
		$	
		$	$
step three:			
		$	
		$	
		$	$
step four:			
		$	
		$	
		$	$
step five:			
		$	
		$	
		$	$
step six:			
		$	
		$	
		$	$
			$

deviations from plan (look at each significant deviation from the plan. Why did it occur? What impact did it have? What learnings did it lead to? etc?

PHASE FOUR: -- EVALUATION WORKSHEET (cont'd)

(some projects explore new areas of action. People will have questions other than "did the project resolve the problem?" or "did actual costs approximate planned costs?" These other questions may be more important. Examples might be "Were local resources used and if so what was the consequence?" "Did the project come under local management and if so what was the result?" If these questions or others are going to be answered, you should develop a plan to answer them at an early stage rather than wait to the end. This worksheet will help you both plan and complete such an evaluation)

PLANNING FOR EVALUATION → | key evaluation question | whose question is it? | what will be done with the answer? | what data is needed to answer it? | who will collect data and how? |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |

PRESENTING & USING RESULTS →

what is the data on the question?	what is the answer to the question?	what decisions result from the answer to the question?

"Us.." We are the people with the biggest stake in the project and it is our needs that must be met and our questions that must be answered.

Useful Answers.." Utility is the key criterion. Does the evaluation allow us to make decisions that serve to maintain or improve our performance?

Important Questions.." There are trivial questions and there are important questions that can be asked about every project. Time allocated to evaluation is often limited, therefore it must focus on the important issues.

Everything else concerned with evaluation is secondary and deals with how you get the answers to those questions.

It is important that the evaluation give the key stakeholders useful answers to important questions that they have about their projects. It is less important that the evaluation be methodologically sound and defensible among a group of professional evaluators!!!!!

It would be nice if evaluations were *both* useful to the stakeholders and methodologically perfect - but this is an ideal that is tough to achieve. Someone will always be able to find shortcomings in the methodology. Concentrate your energy and efforts on utility. Is the evaluation useful? Will it help us to manage future projects more efficiently?

As the project manager, it is your job to manage the evaluation process even if it is being done by the donor. When IDRC decides to do an evaluation, it is important that the stakeholders assure that:

1. It is *their questions* about the project that are being answered and not simply those of the external evaluators or the donor.

2. The questions being answered are the *vital few* that allow the stakeholders to make important decisions about the future and not the trivial many that are of no consequence.

Steps in Carrying Out An Evaluation

Managing the evaluation involves the following steps:

1. Identify the key questions that you want answered about your project. This is the basic step. What do you and the other key stakeholders want to know that you don't already know.

If the key questions are not obvious, call the stakeholders together and get them to fill in the blank in the sentence that follows,

"I want to know..... about this project."

Let each person fill in several blank sentences. Collect them and compare them. Select 6 to 8 of the most common questions and be sure that the evaluation provides answers to these.

2. Select the most cost effective method(s) of finding the answers to those key questions.

3. Find the answers.

4. Report the answers to those with a genuine need to know (including of course, donors).

5. Use the answers to make decisions.

The IDRC Evaluation System

Evaluation Purpose

Within the IDRC, evaluation is largely a retrospective assessment of an ongoing program or a completed project in terms of its value and/or effects.

Evaluation findings are fed into the Centre's planning system to facilitate and improve decision-making within the Centre. For example, evaluation information is used to make funding decisions and formulate policies.

There are three reasons for conducting an evaluation: accountability, corporate memory, and future decision-making.

1. **Accountability.** There are two types of accountability: internal and external.

Internal accountability is defined in terms of the degree to which project/program objectives are met in relation to the resources deployed.

External accountability is defined as reporting to the Parliament of Canada on how IDRC spends the money it receives annually from the Government of Canada.

2. **Corporate memory** involves providing a summary record of what happened that can facilitate follow-up planning and utilization activities.

3. **Future decision-making** is of course facilitated by the information and analysis flowing out of an evaluation.

Figure 1 shows IDRC's Planning and Evaluation Cycle, illustrating how evaluation information from IDRC projects and programs fits into the Centre's overall decision-making framework.

IDRC conducts three levels of evaluations:

- Project Completion Reports (PCRs);
- Evaluation and Policy Studies;
- and In-Depth Divisional Reviews (IDDRs).

PCR's

These provide a synthesis of the project results and are prepared by Program Officers, six months after the completion of a project.

PCRs are prepared for IDRC internal use only and are a useful planning tool when they are well prepared. There are six Centre- wide guidelines which must be followed prior to the preparation of PCRs; however, each division is entitled to tailor these questions to reflect programming directions and procedures.

These questions are as follows:

- What project results were achieved and did project activities and results follow project objectives and methodology?
- Did the project result in building institutional, managerial or individual scientific capability?
- What publication or dissemination of results have been achieved?
- What lessons were learned which would allow IDRC to develop better projects in the future or to improve its policies and practices?
- What follow-up action, if any, is required?

- Was the project worthwhile?

Evaluation and Policy Studies

Evaluation and policy studies are retrospective in nature; i.e., they examine past and even ongoing activities. They assess the value of those activities relative to objective(s) or information needs. These studies can be undertaken either by Centre staff or by external consultants. They cover activities that may involve a single project or a group of projects within programs, countries or institutions. They also deal with policy questions that have Centre-wide implications. In practice, the number of possible studies in this category is greater than the resources available to conduct them.

Divisions are responsible to conduct project and program evaluations. The Office of Planning and Evaluation (OPE) concentrates on studies related to Centre-wide policy issues. In some cases, OPE will collaborate with the divisions to undertake program and even project evaluations.

Given the growth in the number of projects supported by IDRC in the last few years, it is necessary for the Centre to be selective in terms of what projects/programs or issues to evaluate. Centre staff are encouraged, therefore, to prepare evaluation assessments prior to committing resources to any individual evaluation.

Framework for Evaluation Assessments

These assessments honor the following framework:

- Client (s). Who is the study for?
- Purpose of the Evaluation. What does the client want it for?
- Evaluation issues. What are the principal issues to be addressed?
- Information Requirements. What quantitative and qualitative data are required in order to address the key issues?
- Methodology. What approach (es) can be used for the collection of data
- Resource Implications. What could be the overall cost of the study (in terms of person days, fees per day, travel costs, etc.)? What date is the final report required by the clients?
- Conclusion. Should a formal study be carried out? Which methodology and approach appear to be the most effective?

A copy of the assessment report is sent to OPE for their suggestions.

In-Depth Divisional Reviews (IDDRs)

An In-depth Divisional Review centres on an analysis of past divisional activities and future intentions. It is undertaken every 4-5 years to allow the division to make deliberate and strategic choices with respect to the volume of resources, programming directions and types of support.

An important part of the IDDR evaluation process is the requirement that a division conduct an assessment of its past performance for the purpose of planning future activities. The division attempts to determine, for example, whether or not it should continue to fund certain activities; whether a specific program fits national priorities or whether an activity raises some policy issues of interest to IDRC. Great use is made of all kinds of information provided by project managers, researchers, etc.

It is important to note that PCRs and IDDRs differ from evaluation and policy studies in that they are *"set" a*ctivities within the Planning and Evaluation system. All projects should have a PCR and all divisions are subject to an in-depth

Fig. 1 The IDRC Planning and Evaluation Cycle

A. PLANNING INFORMATION

The Demand for Resources

* Development problems and needs.

* Research for Development priorities.

* Economic, social and political conditions.

The Supply of Resources to Research

* National, regional, international research institutions and systems.

* Other Donor agencies.

* The nature of the research for development process.

* Evaluation and policy analysis of Centre programs.

B. POLICIES

* Goal setting, balance between objectives.

* Type of response - what, how and who to support.

* Distribution by division, country, region, institution.

* Duration of support.

* Canada - Third World interaction

C. DELIVERY

* Project, program development.

* Review, approval/rejection.

* Finance, administration.

* Evaluation.

* Follow up.

D. ALLOCATION DECISIONS

* Professional staff - area of expertise and location.

* Budget - projects, activities.

* Support staff and program services.

* Operational logistics - office space, recruitment, location, salaries.

review in a regular cycle. Evaluation and policy studies, on the other hand, are undertaken according to need.

Responsibility for the Centre's Evaluation System

OPE is responsible for creating, maintaining and refining the IDRC's evaluation system. Fulfilling this mandate involves:

- Promoting and co-ordinating evaluation work conducted or sponsored by the program divisions.
- Conducting studies itself.
- Serving as a single source of information. This involves deciding which studies would provide information to be entered into the Centre's Evaluation Database System (OPEIS).
- Serving as a repository of reports.
- Building evaluation capacity in developing countries by using LDC consultants whenever possible and appropriate and by organizing evaluation workshops and seminars for Third World evaluators.

Operating Principles for IDRC's Evaluations

In conducting evaluations in IDRC, the following basic principles are emphasized:

- Evaluations are oriented to meeting *user needs*.
- The level of *resources* allocated to *ex-post* evaluation is kept modest. More Centre resources are devoted to *ex-ante* than to *ex-post* evaluation, and a significant proportion of *ex- post*evaluation is done through *"informal"* mechanisms, such as workshops, project visits and staff meetings.
- Evaluations are *non-confrontational*. OPE does not propose, it responds to requests from various levels of management.
- *Perspective* is more important than *"objectivity"*. Since, by definition, values cannot be eliminated from evaluation, it is more profitable to make explicit the point of view being sought and to conduct the study accordingly.
- The conduct of evaluation studies by developing country researchers contributes to *building indigenous research evaluation capacity. Also, since the Third World view of the value of a research activity is often deliberately sought by the Centre, the involvement of developing country nationals in evaluation studies is doubly important.*
- The *process* of conducting an evaluation is as important as the product.

Use and Dissemination of Evaluation Reports

To enhance the use of evaluation findings within the Centre, among recipient institutions and the Canadian public, OPE has developed two mechanisms, namely the *OPEIS system and evaluation abstracts*.

The OPEIS system, (the Office of Planning and Evaluation Information System) provides a data base on the following:

- Types of evaluation.
- Evaluation objectives.
- Major areas of study.
- Evaluation summaries and conclusions.
- Evaluation methodology.
- Programming and policy implications.

OPEIS allows IDRC staff to have ready access to evaluation findings on a Centre-wide basis.

Evaluation abstracts are designed to provide the general public and Centre staff with summaries of the study results.

Additional Information about Evaluations

Supporting Documents

Improving the Evaluation System	September 1986
The IDRC Evaluation System	November 1986
Planning System in IDRC	October 1984
Comprehensive Program Evaluation Schedule	
Evaluation Plan Addendum (Tab F - 1984-85 MYOP)	September 1984
Guidelines for Divisional Reviews - Date	December 1983
Memo on IDDR procedures	Dec. 1984/Jan. 1985
Evaluation Procedures	November 1984
The PCR System: A Review	March 1987
Typology for Evaluation Reviews	(P. Eastman - 1984)
Briefing notes on OPE	March 1982
Latest draft on Format of Evaluation Data Base (OPEIS)	March 1985

OPE Conference Papers

W.D. Daniels and T. Dottridge "*Evaluation in the Management of Research*", August 1988.

J.D.M. Hardie, Sing C. Chew, and W.D. Daniels "*The Role of Evaluation in Planning*", Canadian Evaluation Society, May 1984.

W.D. Daniels and Sing Chew "*Evaluating National Research Systems and Programs in the Third World - Some Comments", April 1985.*

Sing C. Chew and W. D. Daniels, "*Evaluations in the Third World National Research Systems : Some Trends and Operational Experiences." CES, Toronto, October 1985.*

J.D.M. Hardie, "*Note on the Application of Cost-Benefit Analysis in Evaluating Impact from Reseach* " IFAD, Rome, June 1985

T. Smutylo "*The Evaluation of Externally-Funded Research and Development Projects in Developing Countries" CES, Banff, April 1986.*

Project Records

The ability to keep good records is a required skill for effective project management. The project manager is responsible for the record keeping function and the records kept should allow the manager to monitor the project activities in order to:

- Assure they are proceeding on schedule.
- Identify trouble spots.
- Record decisions, methodologies, and experiences that could be useful as future references.

The Project File

The project file should be a collection of documents on the planning, organization and control of the project.

The Technical Report

The Memorandum of Grant Conditions (MGC) requires the project manager to complete the Technical Report. It requires a report on progress to date and a comparison with the objectives planned for the reporting period.

Fig. 1 Project File

USEFULNESS OF THE PROJECT FILE

1. Serves as a registry of information about the project
2. Serves as a diary about the life of the project
3. Records the amount of time, resources and staff devoted the project objective
4. Serves as a storage medium for analysis and information that may benefit future projects

Fig. 2 Technical Report

CONTENTS OF THE TECHNICAL REPORT

1. Goals and objectives of the project.
2. Objectives and activities for the reporting period.
3. Report on progress in the following areas:
   * Special achievements.
   * Special problems or constraints.
   * How and when difficulties were resolved.
   * Modifications and adjustments made.
   * Output and results.
   * Personnel changes.
   * Financial situation.
4. Expectations regarding the next reporting period
   * Specific objectives.
   * Planned activities.
   * Changes or modifications planned.
   * Resource requirements.

The Financial Report

A Financial Report normally accompanies the Technical Report. It itemizes the expenditures incurred during the reporting periods and outlines the budget required for the next period.

The release subsequent payments are conditional upon the receipt of satisfactory Technical and Financial reports. Most of the delays that project managers encounter regarding appropriate payments from IDRC are related to problems with either the Technical or Financial Report. The key to a quick release of project funds is a well prepared and timely report. Although most of the ISD/STI projects require a technical report on an annual basis, project managers should keep a weekly or at least monthly status report. They will then have a running record of the project from which they can easily compile the annual report without having to do it from memory.

The MGC also indicates that the reports should be sent to the Director, Information Sciences Division, with a copy to the responsible program officer.

Communication

The quality and quantity of communication is an important factor in the development of an effective project team. It is the project manager's responsibility to communicate information to the right person at the right time. This involves managing communication all along the project manager's network.

Communication with IDRC is particularly important. The MGC states that consultation with the Centre must take place before making significant modifications to the project plan.

The principal IDRC contact is the responsible Program Officer who handles all matters relating to the project and is responsible to present all project requests to management and the Board. The management, e.g. Division Director, President, and Vice-President, get involved if the question requires authority levels beyond those delegated to the Program Officer.

If the project has to be extended, the Project Manager must send a written request to the Division Director, with a copy to the responsible Program Officer. The request should state the reasons for the delay, what will be accomplished during the extension period and how and when these activities will be carried out. If the time extension requires a reallocation of budget, the revised budget must be attached to the request.

Project Monitoring Visit

The project monitoring visit made by the Program Officer helps IDRC gain firsthand knowledge about the progress and impact of the project and about the operating environment. It also provides an opportunity for the project team and the Program Officer to discuss any important issues that may have arisen. This visit is scheduled once every 12 to 18 months. However, due to financial and human resource constraints, not all monitoring visits occur on schedule. When appropriate, the Division has substituted the Project Monitoring Visit with discussions held at a seminar, a training event or with another IDRC officer other than the responsible Program Officer.

SECTION VI

Financial Administration

The IDRC Grant Document

Introduction

As its title implies, this reading addresses several important points recipients should be aware of in connection with the IDRC Grant Document or *Memorandum of Grant Conditions (MGC)* as it is more commonly known.

The reading consists of two sections. The first deals with the subject in general terms while the second focusses on specific provisions of the agreement with particular emphasis on clauses of interest to institutions working on projects in the field of information sciences.

The reading does not dwell on the need for the recipient to supply the Centre with an official request for support; nor on the requirement to obtain the approval of the relevant government authorities. The latter requirement is sometimes imposed as the result of the terms of the framework agreement the Centre has concluded with the relevant government. Alternatively, it may simply be the product of a policy decision taken by the government as a condition to the Centre being entitled to fund research in the particular country (the government approval process does not apply to regional or international organizations which are recipients). The important point to note is that for most projects the Centre cannot forward the IDRC Grant Document for signature by the recipient until these two preliminary matters have been effected.

What is an MGC and Why is it Necessary?

In legal terms, an MGC is a contract i.e. a document which reflects an intention on the part of the parties to give rise to legally binding obligations. As such, it is a document that should be read with considerable care.

The MGC is not the exclusive preserve of the Centre. It is a document which is to be used by the Centre and the recipient as a joint tool. The MGC enshrines the understandings reached by the parties. The kernel of the understanding is that the Centre commits itself to funding research by the recipient in exchange for agreement by the recipient to carry out the research in accordance with the terms of the MGC.

One advantage offered by the MGC is that it sets out the rights and obligations of both the Centre and the recipient. As a legal document, it also offers a high degree of certainty that enables the Centre and the recipient to plan their operations more effectively over the life of the project.

Another advantage of the MGC is that it gives rise to significant practical considerations. For instance, no project funds can be granted by the Centre in the absence of the recipient's signature appearing on the MGC. Incidentally, signature of the MGC is to be distinguished from the Centre's internal approval system i.e. a project submitted by a potential recipient may have been approved by, for instance, the Centre's Board of Governors. But, until the project has been translated into contractual terms via the MGC and the contract has been signed, the project has not yet come into existence. It is for this reason that the Centre cannot make funds available prior to signature.

As previously noted, the MGC is subject to a framework agreement concluded between the Centre and the relevant government of the state in which the recipient institution is located. These agreements reflect the willingness of the local government to allow the Centre to fund research subject to certain conditions being fulfilled. They also establish important principles such as the exemption from custom duties and taxes in respect of equipment to be used in projects.

Specific Provisions of the MGC

Identity of the Recipient

The Centre only contracts with institutions, not with individuals. The first question to be settled is the identity of the recipient. In most cases this does not pose a problem. However, there are some legal technicalities that first need to be satisfied. Unless the institution is a government department, university, regional or international organization, the Centre requires evidence certifying the recipient's legal status. This is necessary to avoid the possibility that the Centre could enter into contract with an entity that does not exist in juridical terms.

When the project is funding a network or a number of institutions the key here is to identify which institution will contract with the Centre on behalf of the other institutions involved. The choice of the recipient has important legal consequences. For instance, the recipient is responsible to the Centre for ensuring that the contract is implemented in accordance with its terms. This may require the recipient to enter into subsidiary agreements with the other institutions involved to ensure that they will enable the recipient to carry out its legal obligations vis-à-vis the Centre. In the unlikely event of a dispute, the Centre would turn to the recipient to seek redress. This is the case even when the actual practical work is being undertaken by another institution or the project leader is not an employee or agent of the recipient institution. The important point to note is that the legal relationship is solely with the recipient. Hence, it is the recipient's responsibility to ensure that the project leader or research institutions act in accordance with the terms of the MGC. One

final point. It is important that the contract be signed by a person who has the legal authority to commit the recipient.

Parliament of Canada

The continued legal efficacy of the contract is subject to a number of conditions being satisfied. One of the major conditions is stated early in the text: that sufficient funds are made available to the Centre by the Parliament of Canada during the full course of the grant.

Administration of the Grant

This portion of the agreement is largely self-explanatory. It sets out the initial payment to be made by the Centre and refers to subsequent installments in terms of a separate schedule which is annexed to the agreement. A number of points can, nonetheless, be made.

With respect to those projects where there is more than one recipient, funds cannot be made available to any one recipient until all recipients have signed their respective contracts with the Centre. Additionally, the payments made by the Centre are subject to the recipient supplying technical reports and financial statements (normally every twelve months).

Another important point is that the grant is always valued in Canadian dollars. This sum reflects the maximum commitment the Centre is exposed to.

Specific Clauses

Clause 1: Components and Objectives of Project

Having dealt with the preliminary provisions in the MGC agreement, we can now focus on the specific clauses that are likely to be of interest to recipients.

The first clause to be addressed is that of setting out the objectives of the research project. This is an important provision as it is the only clause which deals with the nature of the work to be accomplished by the recipient. Accordingly, it sets out the gambit of the project by delineating the boundaries of the field of research.

In many research agreements, parties prefer to inject considerable detail to ensure that the subject of the agreement is clear to all parties. We have taken a different approach preferring to keep things simple. Nonetheless, particular care should be exercised when drafting the objectives of the project. They should be expressed in language that is understandable to the average intelligent human being.

The objectives take on added importance when the project is designed to produce a product ie. software. The product, together with the technical reports will provide the basis upon which an assessment will be made as to whether the contract has been carried out successfully.

Clause 2: The Grant Budget

This provision places a legal obligation on the recipient to spend the funds in accordance with an agreed upon budget (which is an integral part of the agreement). Note that the obligation is not to adhere in all minute respects to the budget. The word "*approximately*" is important in this context. Minor deviations from the budget are permitted with the result that only substantial changes from budgetary allocations require the prior approval of the Centre. In this way the Centre endeavours to strike a balance

between exercising prudent control and recognizing the practical exigencies whereby recipients should be allowed to make decisions that take account of changes that have arisen.

Clause 3: Periodic Technical Reports and Financial Statements

Recipients are under legal obligation to submit periodic technical reports and financial statements (normally every twelve months) as a condition for receiving subsequent instalments.

The adjective "*satisfactory*" is used in the schedule. Accordingly, the Centre is legally entitled to determine the quality of the reports before subsequent payments may be made.

The contract does not stipulate that the funds are to be given on a fixed fee basis. Installments are to be related to the actual cash requirements of the recipients defined by the financial statements and forecasts. Accordingly, the instalments may be less (or higher) than the sums mentioned in the schedule. Any unused funds must, at the end of the project, be handed back to the Centre.

In keeping with most contracts of this nature, the agreement also stipulates that the final instalment is to be held back until the Centre has had an opportunity to determine whether the final financial and technical reports are satisfactory.

Clause 5: Disclaimer

The point of this provision is to make it absolutely clear that the Centre and the recipient are operating at arm's length as two distinct entities. Otherwise, it might be argued that the recipient is acting as an agent of the Centre. This could entail the Centre becoming vicariously liable for the actions of the recipient or, as a corollary, the recipient having the authority to commit the Centre to a contract. Clearly, this is not what the parties intend.

The Centre's potential legal exposure is limited to any damage which may have resulted from the negligent acts of the Centre's employees or agents acting within the scope of their authority.

Clause 7:Importation

This clause achieves two objectives. First, it places an obligation on the recipient to be responsible for the arrangements relating to importation of project equipment.

Second, it restrains the recipient from using grant funds to pay for taxes or custom duties levied on such goods or equipment.

Normally, this should not pose a problem. The Centre has agreements with many countries under which they exempt equipment or goods, destined to be used for Centre projects, from taxation or customs duties.

Clause 8: Maintenance and Insurance of Equipment

It is a fundamental term of the contract that all equipment purchased with Centre funds belongs to the recipient. The recipient must seek the prior consent of the Centre before selling or disposing of this equipment during the course of the project.

The insurance dimension of the provision deserves mention. It states that if the recipient insures their own equipment, they must do the same for equipment purchased with Centre funds. If the recipient does not purchase in-

surance for its own equipment it is not under an obligation to create a special insurance regime for equipment falling within the ambit of the project.

If the equipment is lost or destroyed and is not insured, the Centre is not legally obliged to make up the loss.

Clause 13: Dissemination of Results

Two principal ideas run through this provision. First, the recipient is under an obligation to acknowledge the Centre's contribution when publishing any results of the project.

Second, the recipient is the owner of the results and, hence, has an unfettered right to publish them. At the same time the Centre has a broad licence to publish or disseminate the results as well.

An additional obligation is imposed upon the Centre. In the event the recipient is not in agreement with the Centre's wish to have the results published, the Centre is under a legal obligation to give serious consideration to the recipient's views. This right to publish or disseminate is very broad. It includes not only the results of the projects but also "*any other information prepared or produced*" as a result of the grant.

Clause 14: Local Contributions

This is self-explanatory and is part of the consideration that the recipient brings to the contract in exchange for which the Centre provides the grant funds.

Ethics Clauses

The Centre places considerable emphasis on the question of adhering to sound ethical principles. Accordingly, appropriate clauses are inserted into MGCs to cover, for instance, surveys undertaken or physically invasive methodologies being applied. In the case of projects in the Information Sciences area however, ethical principles often referred to in MGC's dealing with other fields of study seem less relevant.

Clause 16: Computer Software

With respect to contracts dealing with projects in hard technology fields, the Centre includes a patent regime in the MGC. This addresses the question of ownership and utilization of the project results that may be protected by proprietary rights.

In the case of Information Sciences projects, a special regime has been crafted to cover computer software. This regime gives both the Centre and the recipient joint ownership rights. This provision is only used in the event that the Centre believes it may want access to the software to disseminate it to other entities. The proprietary protection addressed by the regime is primarily concerned about copyright but it could also include patents where patent protection is available for software (this is not the case in Canada).

The important point is that the regime does not undermine the capacity of the recipient to make use of the software. It has a very broad, unrestricted licence to use the software itself or allow others to do so.

Another significant point is that the recipient is under an obligation to ensure that its employees will enable the recipient to adhere to the terms of the regime. This is to prevent an employee from claiming copyright at the expense of the recipient (its employer) or the Centre. It cannot be over stressed that owner-

ship of the proprietary rights does not reside in an individual but in the recipient (and the Centre).

Clause 17 - Availability of Grant

This is an important provision as it determines the duration of the grant. The commencement date has a special significance. Three alternatives are available. The first is that the grant is available from the date of acceptance i.e. signature by the recipient (in the event that no commencement date is stated in the MGC).

Second, an actual commencement date may be specified in the agreement.

Third, a commencement date may be mutually agreed upon by the Centre and the recipient. A further small point should be noted. In the case of projects involving more than one recipient, the commencement date is also contingent upon the other contracting parties signing the MGCs.

The funds are available until the completion date. This is the date by which all research activities should have been completed, excluding the preparation of the final technical and financial reports. The date is either set out in the provision or it can be inferred from its terms.

Survival of Specific Clauses

Despite a project having terminated, certain provisions of the MGC continue to survive. These would include, for instance, the dissemination section as well as the provision in respect of software.

Conclusion

To sum up, the Centre perceives the MGC as an important document. Not only does it clarify the rights and obligations of the recipient and IDRC, it also injects a sense of certainty over the lifetime of a project. It is a tool to be used as a frame of reference by the Centre and the recipient. It also constitutes the formal link around which the parties interface.

Principles of Financial Administration

In order to understand the interaction between the budget provided by a donor such as IDRC and the budget of the host institution, it is necessary to have a grasp of the principles of financial administration. This reading aims to place the whole issue of finance and budgeting in perspective by first highlighting some problems using a case study of a fictitious project and then indicating some solution. Only by understanding the wider constraints upon an institution and the operation of core budget will a project manager be able to appreciate the difficulties of relating these problems internally to the recipient organization and externally to the donor.

A Case Study

The Institute for Training and Development is organized on a project basis. Each Program Director is a project manager. His\her job is to manage a number of projects in order to meet a contribution quota which is set each year and which is the same for all six Program Directors. Contribution is defined as revenue minus expenses. The contribution is calculated so that project contributions will cover fixed costs and the Institute will break even.

Therefore, each Program Director is responsible for making a contribution to the bottom line of the Institute. This contribution is carefully tracked and measured throughout the year since the Institute lives or dies by the ability of each Program Director to meet quotas.

Within this context let us focus on a specific incident which illustrates how the Institute's Executive Director and the Project Managers are inclined to view things from different perspectives.

One of the Program Directors, Dr. Matata, manages a project in the Caribbean which involves seven different islands and about 100 different contributors. Managing the project involves frequent communication with the people in this network. Part way through the project it became obvious that having a fax machine at the Institute would facilitate things. Many of the participants had fax machines or access to one. Since the purchase of a fax machine had not been budgeted for in the project proposal, Dr. Matata approached the Executive Director with this expenditure request.

The Executive Director's reply was, *"Go ahead - providing the machine is purchased out of project funds."* As we will see later, this is a logical reply and one which we could anticipate given the Executive Director's interest in keeping the Institute's fixed costs as low as possible.

Dr. Matata, after analyzing his project expenditures, realized that the money currently being paid to a courier company to send fax messages would be enough to make a monthly payment on a fax machine if one was installed at the Institute.

And so the issue was resolved - the fax machine was purchased without increasing the administrative or overhead costs of the institute and Dr. Matata could justify the purchase of the machine out of the project budget.

However, as soon as the fax machine was installed, the other Program Directors realized that it could be a great help to them as well. Soon the machine was being used by everybody in the organization.

From Dr. Matata's viewpoint, the method of financing the fax machine was no longer fair. His objective, of course, is to accomplish as much as he can given a limited project budget. The less he has to pay for administrative costs such as purchase of a fax machine, the more resources he can direct toward the project goal. *"Why then"*, he thought, *"am I paying for the fax machine when it is being used by the Institute as a whole?"*

Whereupon he again approached the Executive Director with this problem. Again the Executive Director was prepared to listen and agree to any financing plan that would not increase the fixed or overhead costs of the Institute. Together they agreed that Dr. Matata's project would pay a fixed fee each month toward the purchase and that each Program Director would pay a user fee of $1.50 per page. This formula would stay in effect until the fax machine was paid for.

The new formula successfully spread the costs of the acquisition among all the *"user"* projects within the Institute and seemed satisfactory. That is until another Program Director, motivated to maximize his own project resources, discovered that a communication company close by would send fax messages at $1.00 per page. Of course he began to use this service in spite of the fact that there was a machine now located at the Institute.

Once the Executive Director realized what was happening, he adjusted the formula to match the commercial rate of $1.00 per page. His interest was in the Institution itself and in providing good service to the Program Directors. He was interested in building additional capacity within the Institute. Given the situation, he obviously had to act to assure that the Program Directors, in their pursuit of project goals, were also helping the Institute as a whole meet its goals.

Conflicting Objectives

The case illustrates how the objectives of an individual Project Manager and those of a Executive Director may differ - and in fact may be in conflict. In a healthy institution this basic conflict between the Executive Director and the Project Managers is one which is out in the open, talked about, negotiated and resolved to the benefit of both parties.

In order to understand this conflict more fully, it is necessary to understand the financial model of the organization and the steps that the Executive Director must work through in order to produce a budget for the institute. We will do this by working through a planning and budgeting case study. It is presented using a six step process as follows:

- Step 1: Creating a Financial Model of the Agency.
- Step 2: Relating Mission, Objectives, and Strategies to Activity Level.
- Step 3: Converting Activity Level to an Agency Overhead Budget.
- Step 4: Integrating the Institution's Overhead Budget into the Program Budget.
- Step 5: Setting Price Levels.
- Step 6: Completion of the Budget.

Remember that we are writing from the perspective of the Executive Director. In that way we hope to gain some understanding of the way he views financial administration in order to shed light on some of the issues raised in the case presented above.

Step 1 - Creating the Financial Model of the Organization

A financial model identifies the financial variables and clarifies their relationships so as to create a predictive financial model.

Just as a commercial enterprise, your host institution has costs and receives revenue. While your institution may be similar to those of the commercial enterprise in that regard, there are important differences.

The financial model for the non-profit institution will now be created a step at a time by first introducing each of the three financial variables and then by showing how they interrelate. The result will be a financial model which will illustrate how your institution prepares an operating budget. We will then use this model to better understand the perspective of the Executive Director and the Project Manager within the institution.

Financial Variable #1: Core Expenses

Non-profit institutions are stewards. In the process of discharging their responsibilities they incur "*in-house*" expenses. These are administrative overheads but often referred to as core expenses.

In the short term, say one year, core expenses tend to remain unchanged no matter what activity level applies. For this reason, they are also called fixed expenses.

An example of a core expense is rent. Rent expenses have no relationship to the institution's activity level in the short run. A similar case can be made for other overhead expenses such as staff salaries, utility expenses, insurance premiums, property taxes, depreciation of equipment and so on.

Financial Variable #2: Program Direct Expenses

Program direct expenses are related directly to the projects and programs of the institution. They normally vary with activity level and are often called variable expenses.

To illustrate the meaning of core expenses and program direct expenses, consider a hypothetical institution whose mission is to increase

general public awareness of the need to protect the environment. To do this, the institution is attempting to create an expanding network of members who have concerns about increasing threats to the environment. For this budget year, the institute plans to organize an international seminar for membe organizations and distributc eight issues of a newsletter.

Figure 1 identifies the estimated core expenses for the budget year.

Fig. 1 Core Expenses

Expense Item	**Amount**
Salaries and benefits	$189,500.00
Office Rent and Salaries	26,180.00
Automobile Expenses	2,500.00
Insurance	1,500.00
Legal and Audit Fees	2,800.00
Property Taxes	670.00
Depreciation	1,200.00
Total	$224,350.00

Fig. 2 Program Direct Expenses

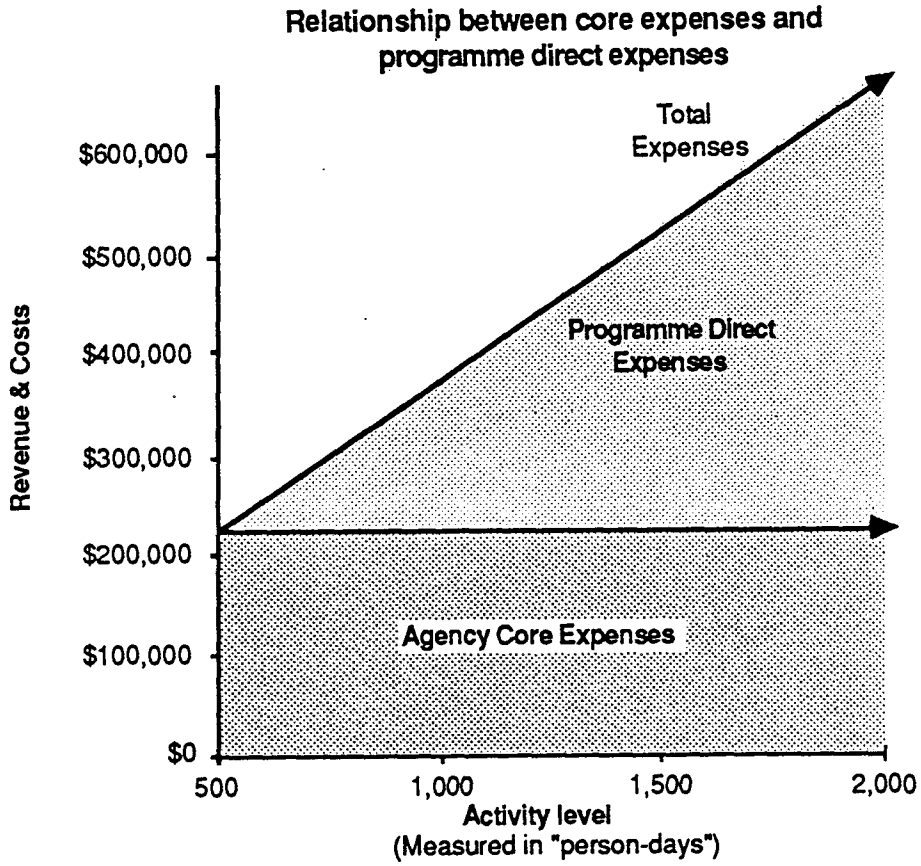
Expense Item	**Amount**
Participants Travel	$105,000.00
Accommodation and Board	50,000.00
Hire of Conference Facilities	10,000.00
Simultaneous Interpretation Services	15,000.00
Subtotal	$180,000.00
Environmental Concerns Newsletter	
Producing and distributing eight issues @ $8,600.00 each	$ 69,200.00
Total	$249,200.00

Figure 2 identifies the program direct expenses which include the cost of holding the seminar and productivity

The relationship between core expenses and program direct expenses is illustrated in the following diagram. (Figure 3)

Core expenses are shown as a horizontal line since the same expenses are incurred regardless

Fig. 3



of activity level. Program direct expenses, on the other hand, increase as the activity level increases. As more projects are undertaken, related program direct expenses increase.

Note that program direct expenses are added to core expenses at each activity level to produce total expenses. At zero activity level, total expenses are equal to core expenses.

Financial Variable #3: Revenue

While a close parallel can be drawn between the commercial enterprise's fixed and variable expenses and a non-profit institution's core and program direct expenses, the parallel ends with the introduction of revenue. For a commercial enterprise there is always a direct relationship between activity levels and revenue. If no sales are made, revenue is zero. As activity (sales) increases, more revenue is generated. For a commercial enterprise the revenue line on the diagram would look like it does in Fig. 4.

The slope of the revenue line will depend on the price of the product. With a higher price, the slope of the line will be steeper.

Revenue for the non-profit institution is different. Often non- profit institutions receive funds for administrative support - funds that are

Fig. 4

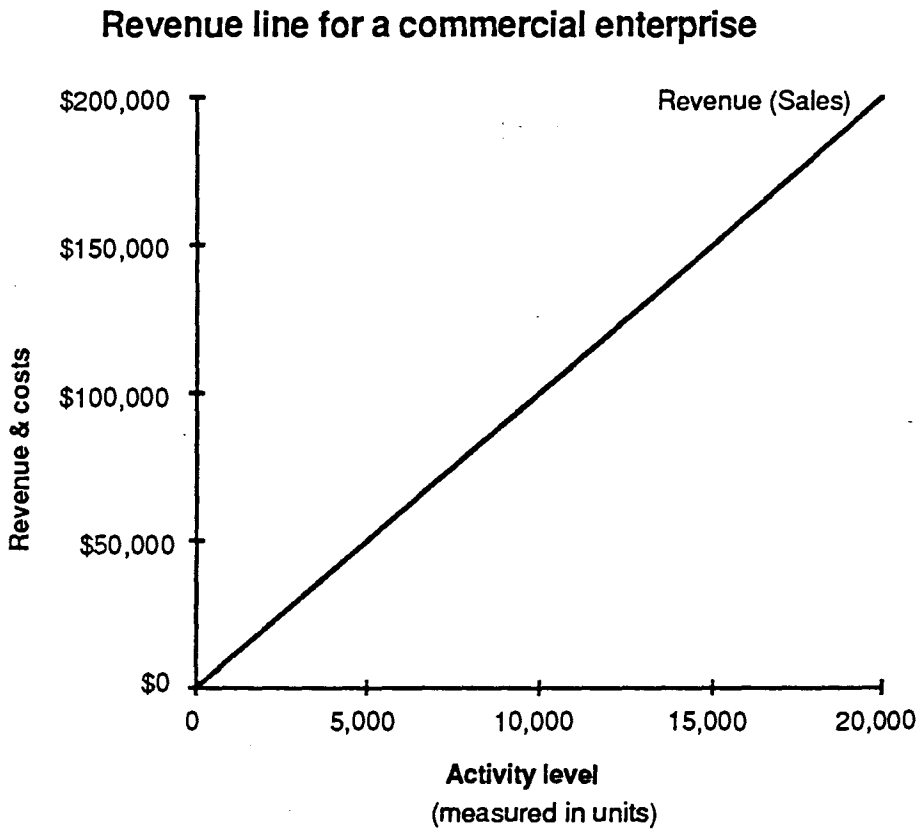
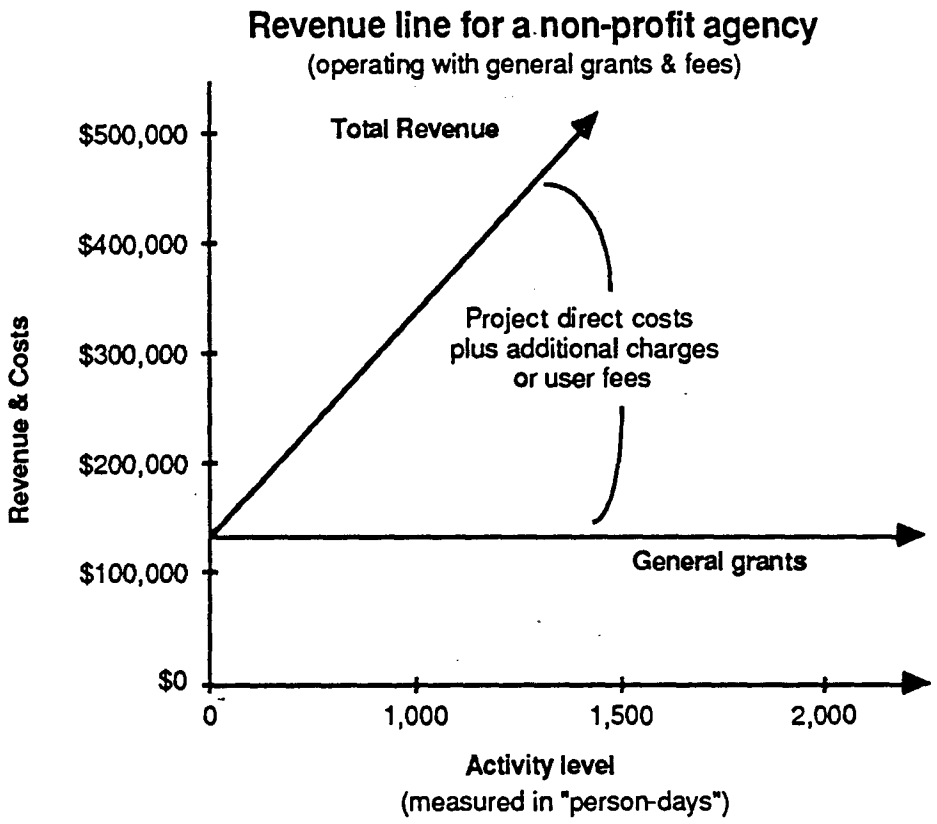


Fig. 5



not tied to specific projects. These funds are referred to as general grants. For a non-profit institution that finances all core expenses from grants, the revenue line on the diagram looks like the one illustrated in Fig. 5.

In many instances, however, non-profit institutions are unable to cover their core expenses from general grants alone. When such a shortfall exits, the institution must either negotiate with the funding agencies to obtain

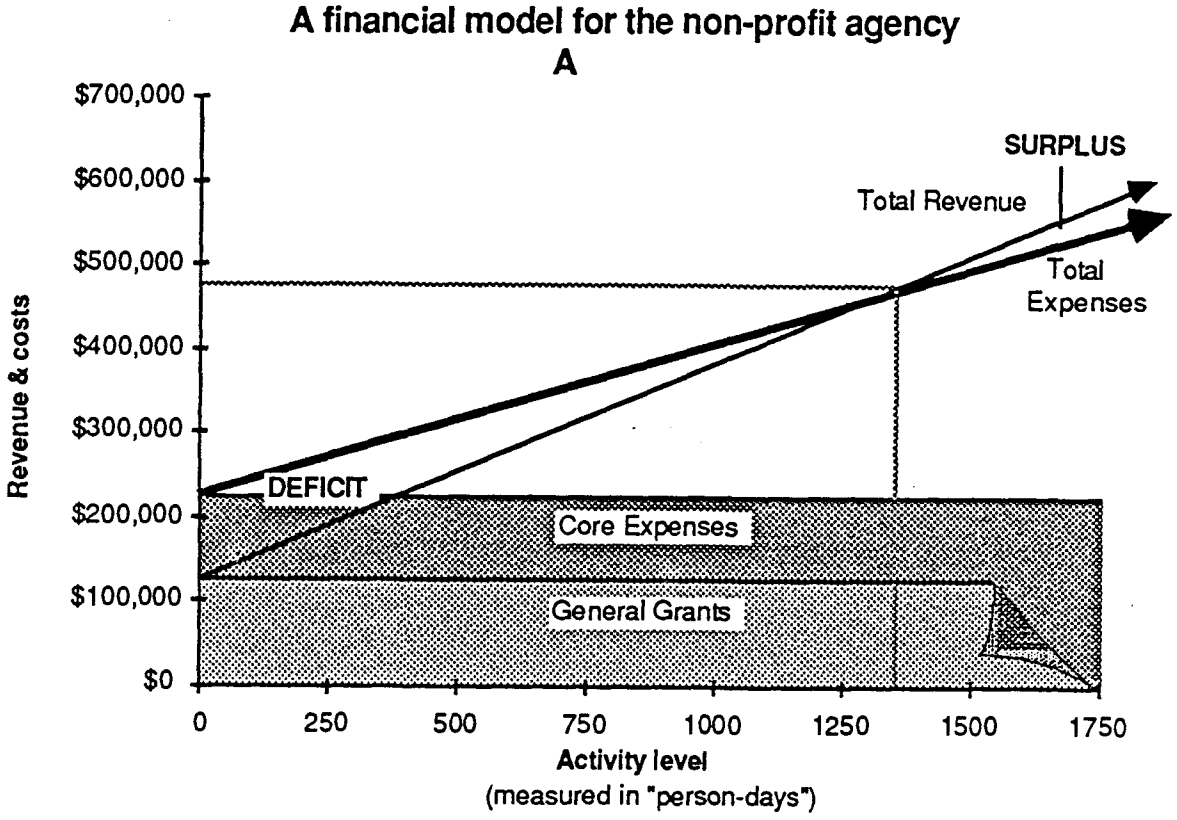
funds to cover program direct expenses or alternatively, charge a user fee for some services. For a non-profit institution that operates with general grants plus additional charges or user fees, the revenue line on the diagram looks like that in Fig. 5.

Fig. 6

Completing the Model

The financial model for the non-profit institution can now be completed.

Core expenses are $224,350.00 and program direct expenses $249,200.00.

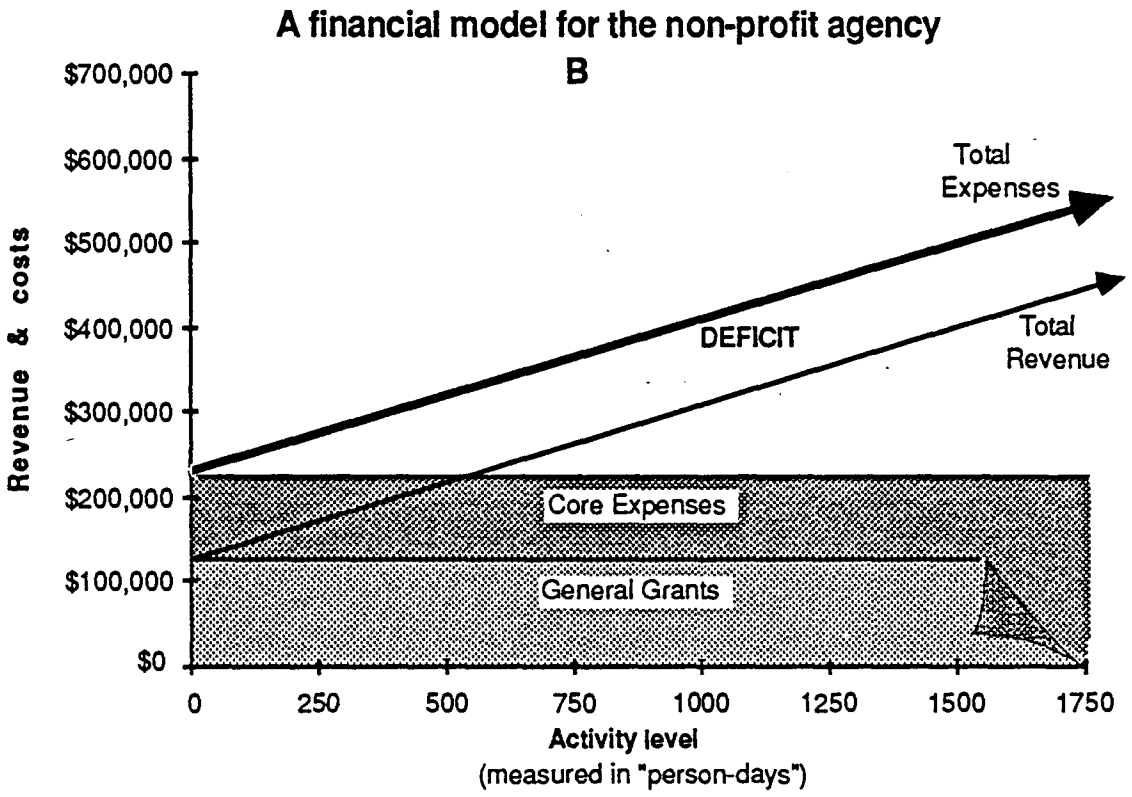


Assuming a situation where a general grant of $125,000.00 has already been secured, it is still necessary for the institution to generate revenue over and above that needed to cover program direct expenses. Provided these additional charges can be negotiated, the completed diagram will look like *"A"* in Fig. 6.

If the institution is unsuccessful and is only able to negotiate additional revenue to cover program direct expenses, the completed diagram will look like *"B" in Fig. 7.*

In *"B"* the institution has a shortfall of $99,350.00 regardless of activity level. This is be-

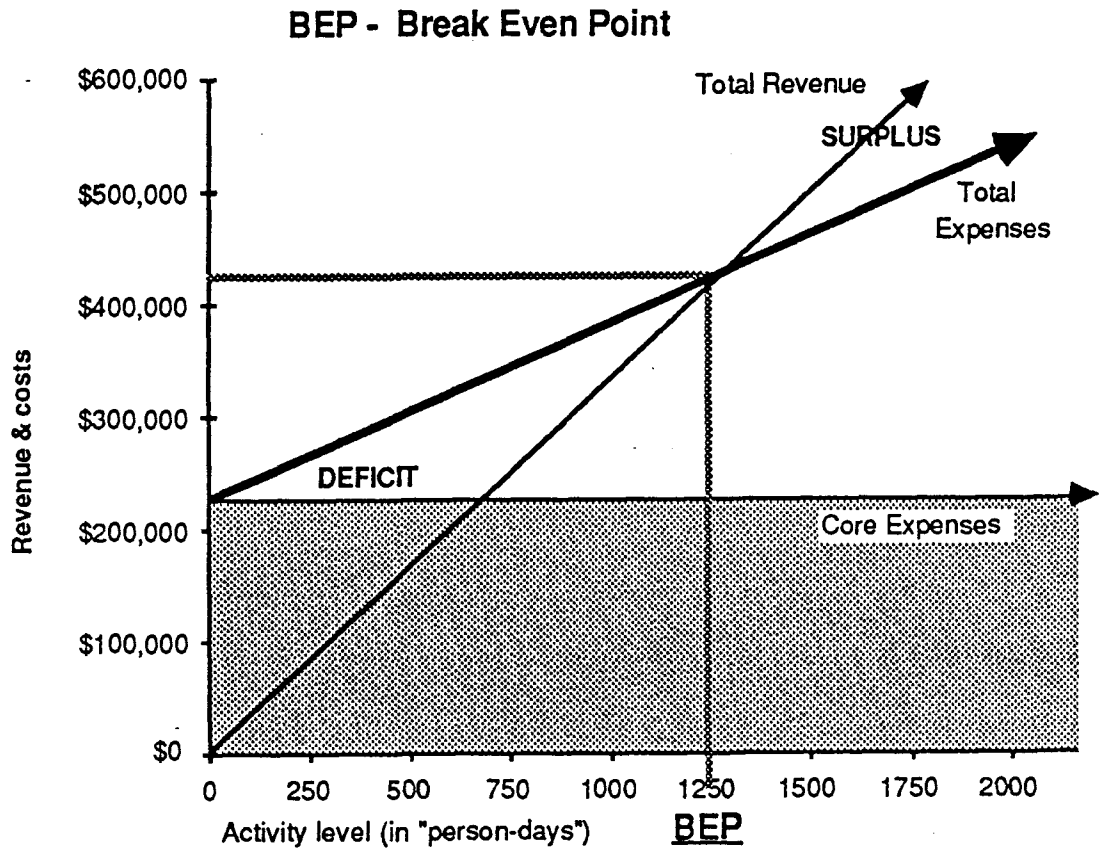
Fig.7



cause the general grant of $125,000.00 is not large enough to cover the core expenses of $224,350.00.The institution is able only to negotiate additional revenue to cover program direct expenses. Hence the shortfall.

If, on the other hand, the institution is able to negotiate an extra charge over and above program direct expenses, the situation illustrated in "*A*" will result. Provided the activity level is high enough, the institution will break even or generate a surplus.

Fig. 8



Suppose the circumstances depicted in "*B*" prevail. The institution must raise money if it is to implement the planned program. There are the following alternatives:

- Finance the deficit from past savings.
- Raise an administrative charge of 40% on program direct expenses 249,200.00 X 40% = $99,350.00).
- Ask the seminar participants to subsidize the costs by paying a registration fee, partial cost of accommodation, etc.

The institution will probably use a combination of all these methods to raise the necessary funds. If it is successful, then the scenario depicted in diagram "*A*" applies.

Break-Even Analysis

To encourage non-profit agencies to plan and utilize their full capacity, funding agencies often insist on financing core expenses as a proportion of total project costs. Where an institution's funding is completely tied to project activity, the optimum level of activity is often that which will enable the institution to recoup enough funds to just cover core expenses. Their position is illustrated in Fig. 18.8 at the break-even point (BEP).

It is important to note that for an institution which receives both general and specific grants, with or without a charge, the break-even point has no bearing on the optimum activity level. The core expenses may already be covered even if no activity takes place. We have to use the project approach or other means to determine the optimum activity level. The break-even point should, however, always be identified because it marks the point of departure from a deficit budget to a surplus budget.

Step 2: Relating Mission, Objectives and Strategies to Activity Level

How does Activity Level Relate?

The Executive must ensure that the institution is very clear about its mission before the planning process begins. Planning will start with setting goals and objectives and devising strategies to achieve them. Available resources will be reviewed in the light of desired objectives and this will involve balancing one against the other until a realistic combination is achieved. This is the process that the Executive Director will use to set a suitable activity level.

How do we Project a Desirable Activity Level?

We discussed in detail in Step 1 how the Executive Director is interested in studying the revenues and costs under different circumstances in order to determine the optimum activity level and the point of departure or the break-even point.

Forecasting the future requires knowledge of the past and present. The best source of information regarding the current financial status of the institution can be found in the most recent financial statements. From these the Executive Director can construct a financial model which will help him to forecast revenues and expenses for various levels of future activity.

Using the Model to Budget

In the simplest case, the Executive Director can now obtain readings for total revenue, program direct expenses, core expenses and surplus (or deficit) directly from the chart simply by

deciding the activity level for the next budget year. Provided there is little change from year-to-year, this may be appropriate.

In many cases, however, some financial variables will change along with the new activity level. The challenge facing the Executive Director is to identify how the financial variables interrelate at the chosen activity level. *The key to this is for him to identify a level of operating revenue which, when combined with core and program direct expenses, and revenue from general grants, will yield a desired or planned level of surplus.*

To see how this is done, follow each step as the model is revised for the budget year.

1. Core Expenses Increase

Two full-time program staff are hired, moving the activity level to 1,520 *"person days"* and increasing salary expense (core expense) by $40,000. The core cost curve increases by $40,000 at an activity level of 1,520 *"person days."*

2. Revenue from General Grants Decreases

The funding institution decides to reduce its grant from $125,000 to $100,000. The revenue from this grant is not tied to a particular project.

3. Program Direct Expenses.

Program direct expenses grow at a constant rate. This assumes that the program mix is unchanged. To calculate program direct expense at an activity level of 1,520 person days, follow this procedure:

- (i) Calculate program direct expense per person day at 1,320 person days. (Program direct expense of $249,200 divided by 1,320 + $188.80).
- (ii) Calculate the increase in person days in order to attain the budgeted activity level. (1,520 days - 1,320 days = 200).
- (iii) Calculate additional program direct expense. (200 person days X direct expense per person day of $188.80 + $37,760).
- (iv) Calculate program direct expenses at 1,520 person days (249,200 + $37,760 = $286,960).

4. Operating Revenue Increases

Finally, it is possible for the Executive Director to determine the amount of operating revenue required. Since the expense structure and the level of core funding is given, budgeting the appropriate level of operating revenue is critical if the objective is to achieve a particular level of surplus. In this example, the surplus objective is $30,000 for the year.

By taking readings at an activity level of 1,520 person days, the following budget variables can now be determined: (See Fig. 9 and 10)

Fig. 9

Budget Variables

- Core Expenses $264.350

  Core expenses are assumed fixed in the short term.

- Program Direct Expenses $286,976

  Program Direct Expenses are the direct expenses of project of the non-profit. No overhead: expenses are included.

- Revenue (General Grants) $100,000

  The core funding of the non-profit. No revenue from projects is included.

- Revenue (Operating) $481,326

  The revenue from projects or all other sources other than core funding.

- Surplus

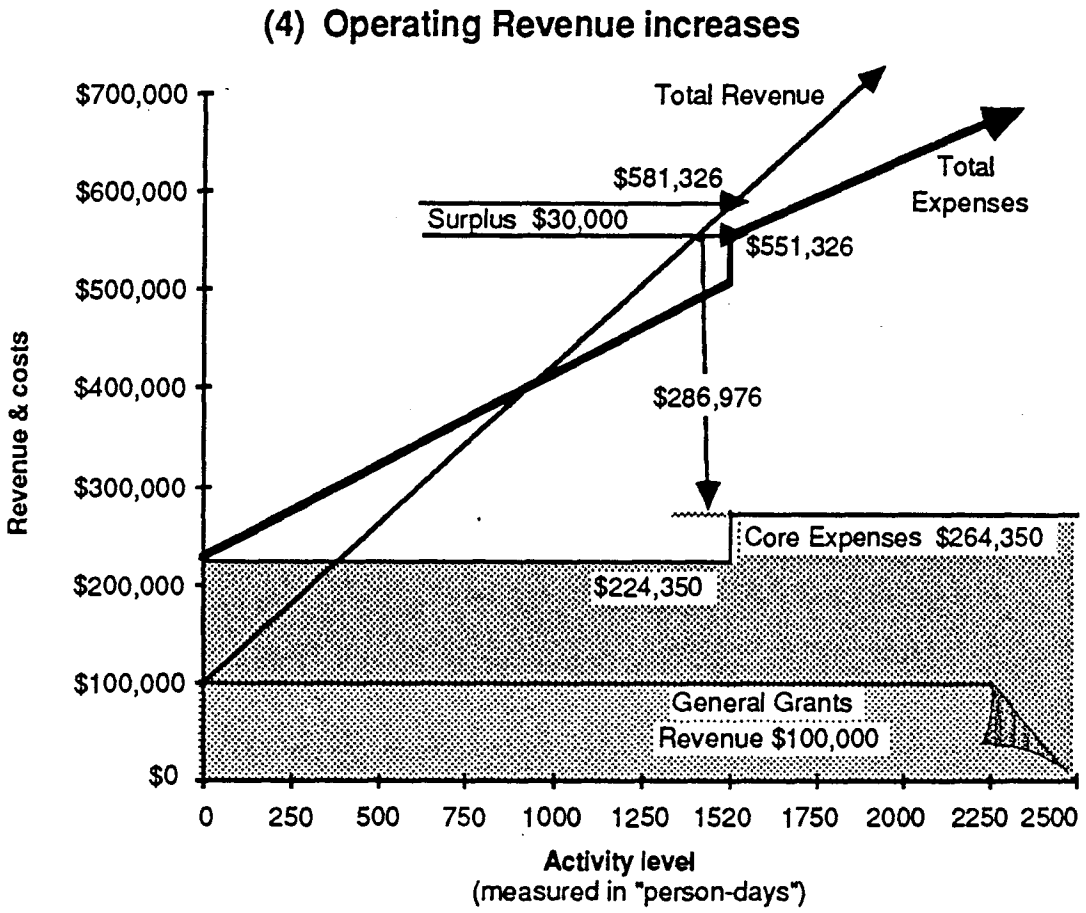
  The excess of revenue over total expenses.

What the Executive Director should discover from this exercise is that operating revenue must be $481,326 in order to achieve the objective of a $30,000 surplus. By setting the level of core and program direct expenses, and then determining the level of core funding, the Executive Director can use the model to determine how much operating revenue he requires to reach the financial target.

Whether a target of $581,326 is feasible is yet another question that the Executive Director must be concerned with.

We will deal with it further under Step 5, Setting price Levels.

Fig. 10


(4) Operating Revenue increases
$700,000
$600,000
$500,000
$400,000
$300,000
$200,000
$100,000
$0
Revenue & costs
Total Revenue
$581,326
Surplus $30,000
$551,326
Total Expenses
$286,976
Core Expenses $264,350
$224,350
General Grants
Revenue $100,000
0
250
500
750
1000
1250
1520
1750
2000
2250
2500
Activity level
(measured in "person-days")

Step 3: Converting Activity Level to an Agency Overhead Budget

Detailed Budgeting of Overhead Expenses

The financial model of the institution already sets out a level for core expenses. To prepare a line-item budget, however, the Executive Director must examine each overhead expense item in greater detail. The results of the analysis will either confirm the amount that is used in the model or alternatively, enable the Executive Director to reach a more accurate forecast of core expenses. This forecast can be used to revise the model.

A spreadsheet can be used to complete the analysis of the overhead expense budget:

Step 4: Integrating the Agency Overhead Budget and the Program Budget.

The Rationale for Cost Recovery

The Executive Director is concerned with the objectives of the institution as a whole. He is concerned with rendering a service and still breaking even financially.

The cost of the service is called program direct expense. The institution's cost of delivery is called the core expense. The Executive Director

Fig. 11 Overhead Expense Budget Analysis

OVERHEAD EXPENSE BUDGET ANALYSIS			
OVERHEAD DESCRIPTION	LAST YEAR ACTUAL	POSITIVE OR NEGATIVE RATIONALE	BUDGET
Advertising	$1,800	add $300 to support new staff level	$2,100
Automobile	2,500		2,500
Delivery	1,800		1,800
Depreciation	1,200		1,200
Dues & Licenses	800		800
Insurance	1,500		1,500
Interest	1,800	reduce $600 - loan paid off	1,200
Legal & Audit	2,800		2,800
Other	800		800
Property Tax	670		670
Repair and Maintenance	450		450
Rent	4,680		4,680
Salaries & Benefits	189,500	add two professional staff @ $40,000	229,500
Supplies	1,200	add $300 to support new staff level	1,500
Telephone	7,050		7,050
Travel	4,200		4,200
Utilities	1,600		1,600
TOTAL	$224,350		$264,350

Fig. 12 Distributing Overheads

OVERHEAD DISTRIBUTION SHEET

OVERHEAD DESCRIPTION	TOTAL ADMIN.	SUPPORT CENTRE A EXEC.	B DATA PROC.	C BLDG.	D	E	PROGRAM EDUC.	COUNS.	MEDIA		
Advertising	$2,100	-	-	-			600	700	800		
Automobile	2,500	2,500	-	-			-	-	-		
Delivery	1,800	400	500	-			300	300	300		
Depreciation	1,200	-	600	600			-	-	-		
Dues & Licenses	800	200	-	-			200	200	200		
Insurance	1,500	-	750	750			-	-	-		
Interest	1,200	-	600	600			-	-	-		
Legal & Audit	2,800	2,800	-	-			-	-	-		
Other	800	400	-	-			200	200	-		
Property Tax	670	-	-	670			-	-	-		
Repair and Maintenance	450	-	200	250			-	-	-		
Rent	4,680	-	-	3,680			250	250	500		
Salaries & Benefits	229,500	50,000	25,000	20,000			40,000	54,500	40,000		
Supplies	1,500	750	750	-			-	-	-		
Telephone	7,050	2,000	2,000	-			1,000	1,000	1,050		
Travel	4,200	1,200	-	-			1,000	500	1,500		
Utilities	1,600	300	300	300			200	200	300		
DISTRIBUTION TOTAL	$264,350	$60,550	$30,700	$26,850			$43,750	$57,850	$44,650		
A. EXEC. ADMIN.		(60,550)	10,000	5,550			15,000	15,000	15,000		
B. DATA PROC.			(40,700)	10,700			10,000	15,000	5,000		
C. BLDG.				(43,100)			23,100	10,000	10,000		
D.											
E.											
ALLOCATION TOTAL							$91,850	$97,850	$74,650		

is responsible to assure that there are sufficient funds to cover all the costs over the long term. A deficit in a given year should only be allowed if it can be covered by past savings or anticipated future surplus. Without either, a deficit should not be incurred. Persistent deficits may cause the demise of the institution.

The actual cost of a service is not just the program direct expense but both the direct costs and the cost of delivery. The Executive Director is interested in the total cost of each project because this knowledge will help him establish the "*price*" that has to be paid.

Deciding on the user fee or the additional amount to add to a contract for institution overhead is a pricing decision just as it is for the commercial enterprise. Surprisingly, many non-profit agencies, and even the funding agencies that support them, prefer not to think of "*pricing*". However, if an institution recoups part or all of its core expenses in this way, it will have to get involved in pricing or cost recovery, user charges, professional fees, fees for service etc.

Establishing a realistic "*price*" for project outputs requires a thorough knowledge of each cost element and an allocation procedure which requires that each project bears a fair portion of institution overhead expenses. This is the only way that the Executive Director can be assured of covering all costs and keep the institution viable.

Thus we see that the Executive Director looks at costs primarily as being overheads + program direct expenses. The project manager has a more narrow focus. His job is to manage the program direct expenses to the best of his ability. This basic difference in terms of what costs are relevant to whom causes discussions similar to those described in the opening case.

Determining the Cost of Programs

We shall use the overhead budget developed in Step 3 to demonstrate how the Executive Director goes about allocating overhead expenses to specific projects or program categories. We are assuming that the institution operates within three major programs areas: Education, Counselling and Media. Within each of these areas there may be several different projects but we shall confine our analysis to the program category level.

To allocate overhead costs, an overhead distribution sheet is set up as in the example on the next page. The Executive Director then uses the form to allocate all overhead costs to programs. The following steps are used to complete the form:

Step A. Establish support Centres and Program Titles

The Support Centres are introduced to make it easier to allocate particular overhead items to these categories first rather than making the allocation directly to programs. The Support Centres used here are: Executive Administration, Data Processing and Building.

The Support Centres are ranked in terms of the relative amount of support they provide to other centres. In our example, more Executive Administration goes into Data Processing than, say Data Processing goes into Executive Administration. The same logic applies to ranking Data Processing ahead of Building. The ranking exercise is not necessary if the Support Centres involved appear not to have any particular ordering.

Step B. Record Agency Core Expenses or Overhead

All the institution's core expenses are recorded from the current year's budget. The Executive Director must ensure that Program Direct Expenses are not included and that no other overhead costs such as depreciation are overlooked. Except for Program Direct Expenses, all other costs must be included.

Step C. Allocate Agency Core Expense to Support Centre and Programs

Using a little imagination, the Executive Director can allocate these costs to each Support

Centre and Program. Where possible expenses are allocated directly to the program category. Consider these examples:

Salaries and benefits for $229,500 are distributed according to the way each staff member spends his time. For example, $50,000 representing the Executive Director's salary, goes to Executive Administration; $25,000 representing the salary of two computer operators goes to Data Processing; $20,000 representing the salary of a janitor and maintenance person goes to Building; and $40,000, $54,500 and $40,000 representing the salaries of program staff go to the respective program areas. Advertising is allocated to each of the three programs according to actual costs incurred. And so on.

When the allocations have been completed, the Executive Director can then total each column representing a Support Centre or Program to arrive at the Distribution Totals.

Step D. Allocate Support Centre Agency Core Expense Costs to Programs

At this point Agency Core Expenses have been allocated, but not all to programs.

Next, Support Centre descriptions are written in the left-hand bottom portion of the sheet in the same order that they appear across the top.

For each Support Centre, the amount of Agency Core Expense initially assigned is re-allocated.

In the example, $60,550 of Executive Administration expenses have to be re-allocated (Step 1). The method may seem arbitrary but there are some reasonable guides. For instance, the number of persons working in each remaining Support Centre and Program area might be used as the basis for the re-allocation of Executive Administration.

Notice that $10,000 is re-allocated to Data Processing which in turn increases the amount of Data Processing expense that has to be re-allocated to $40,700 (Step 2). Again, this re-allocation is done on a reasonable basis, for instance, the amount of data processing time devoted to each remaining Support Centre and Program area.

Finally, $43,100 of Building expenses have to be re-allocated. This is done on the basis of the number of square feet of building devoted to each program (Step 3).

When all support centre distribution totals have been re-allocated to programs, the procedure is complete.

$91,850, $97,850, and 74,650 is the amount of institution overhead expenses allocated to Education, Counselling and Media respectively.

Fig. 13 Total Cost of Programs

	Education	Counselling	Media
Program Direct Expenses	99,294	24,106	163.576
Overhead Expenses	91,850	97,850	74,650

The Executive Director can then determine the total cost of each program by adding the program direct expenses to each of these totals.

Arriving at the total cost of each project should be relatively straightforward if proper records are kept. Since program direct expenses are costs that can be identified with specific projects, the accounting records will provide the totals from the previous year.

The financial model developed earlier indicates the total project direct expenses for all projects is $249,200. Accounting records also provide the following breakdown of these expenses: $86,200 for Education, $21,000 for Counselling, and $142,000 for Media. From the financial model, it can be determined that program direct expenses for the budget year are $286,976. If a similar percentage distribution among programs is assumed, then the breakdown of program direct expenses is $99,294 for Education (86,200 divided by $249,200 X $286,976) $24,106 for Counselling and $163,576 for Media.

When a percentage distribution as illustrated above is used however, it assumes that a similar distribution of Education, Counselling and Media programs will exist in the budget year. This may be completely inaccurate if future planning shifts the program emphasis and a different mix of programs results.

Therefore, the Executive Director would know that the total cost of each program area is illustrated in Fig. 13.

The Principle of Rationalization

The project manager must realize then, that the Executive Director's job is to allocate overhead expenses to program areas in order to determine the true cost of each program. However, the project manager must ensure that the system used to allocate expenses to his project is **rational and logical.** If it is not rational and logical it probably will not be acceptable to the funding agency - for this the project manager could be held accountable. Also, poor allocation of overhead expenses could ultimately mean that more project resources are being directed toward overheads rather than in pursuit of the project goal.

Referring again to the opening case, the project manager questioned the rationalization used to allocate overhead expenses to his project. This was the proper thing for him to do. He must carefully monitor each and every expense incurred by his project, both project direct expenses and overhead expenses. When the project manager called in to question the overhead distribution, then the Executive Director was also right in being open and flexible regarding this issue. The end result was that the project manager, Dr. Matata, had more resources to direct toward the project goal and the organization found a fairer way to allocate the overhead costs.

Fig. 14

BUDGETED REVENUE AND EXPENSES STATEMENT

	EDUCATION	COUNSEL	MEDIA	GRANTS	TOTAL
REVENUE	"Gap"	"Gap"	"Gap"	100,000	$581,326
LESS: PROG. DIR. EXP.	102,200	19,100	165,676	-	286,976
EQUALS: CONTRIBUTION				100,000	294,350
LESS: OVERHEAD EXP.	91,850	97,850	74,650	-	264,350
EQUALS: SURPLUS				100,000	$30,000

Step 5: Setting Price Levels or Revenue Formulae

Determining Contribution Required From Each Program

Contribution is a term widely used in commercial enterprise. That is, the selling price of an item includes the direct cost of producing or buying the item plus a fair portion of other costs incurred by the enterprise which cannot be attributed to any particular item (fixed costs). The difference, then, between the selling price and the direct cost yields a *"contribution margin"* for the item. If the amount is positive, it has made a **contribution**. If the difference is negative, the enterprise has subsidized that particular transaction.

The concept of contribution has analogies within non-profit agencies who, in principle, operate in the same way. The difference is that the price established by the non-profit institution is not a market price. Non-profit agencies are usually not in competition and in some cases core expenses (fixed costs) are already paid for from general grants. This allows the *"price"* to come down as low as the cost of providing the service. When there are no general grants, the Executive Director must ensure that the shortfall is distributed amongst the project program areas in order to determine the price of each project output.

Aiming for a Surplus

Non-profit agencies frequently find it difficult to make long- term plans because funding agencies are often reluctant to make long-term financial commitments to the agencies they support. This is understandable where the initial source of funds is from governments or foundations whose policies change from time to time. What is not understandable, though, is why funding agencies deny non-profit agencies an opportunity to have a capital base on which they can finance deficits in bad years and provide working capital or cashflow between the period a grant is approved and the date it is received.

Many funding agencies prefer to receive budgets that just break even. If a surplus is indicated, it may be struck out before arriving at the amount to be granted.

Non-profit agencies must convince their-partners that budgeting for a reasonable surplus is healthy. One way of doing this is to make full disclosure of the surplus and to account fully for the movement of surplus funds from year to year.

Examine the following abbreviated Budgeted Revenue and Expense Statement, (Fig. 14) which is partially complete with information derived from our financial model and subsequent analysis. Where information is still missing, the "*gap*" is indicated.

The budgeting exercise will finally be completed once we determine the operating revenue for each program area.

Unfortunately, there is no magic formula to tell the Executive Director what the revenue for each program will be. He will have to go back to the records and examine correspondence with funding agencies interested in the institution's program. Then he will have to send project proposals accompanied by the budget and specific requests for funding.

Where a user fee is charged, he will have to go back to past records since past experience is a good place to start in making forecasts about the future. Record keeping, therefore, is very important for accurate budgeting.

Determining the Price

You will recall that person days was used earlier to identify activity level. This was done for convenience since "*person days*" is common for many programs carried out by non-profit agencies. However, no institution is tied to this measure when setting a price for project outputs. The following table identifies some of the possible choices for the three program areas identified in our example.

Education	**Counselling**	**Media**
*Person days	*Person days	*Person days
*Classroom days	*Number	*Number
*Students	counselled	of publication
*Courses		

Take the Education program for an example. Assume classroom days are selected as the pricing unit.

Days in year	365
less: Weekends & holidays	130
equals: Available Days	235
times: Utilization	60%
	(based on past records)
equals: Days charged	141

If classroom days are used as the pricing unit and there are 141 days available for charging (based on the above set of assumptions), it then follows that the total revenue from the "*Education*" program must be derived from these chargeable days.

Reference to the above incomplete Budgeted Revenue and Expense Statement further reveals that at least $102,200 of program direct expenses and $91,850 of overhead expenses must be covered if the Education program is to break even. Revenue of, say, $200,000 would allow the institution to generate a small surplus from this

activity. Therefore, $200,000 in revenue must be generated from 141 classroom days. Each classroom day, then, carries a price of $1,418.00 (200,000 divided by 141).

Is this feasible? Will your user group pay the price? A classroom day at $1,418.00 may be too much, making the planned budget unrealistic.

But before abandoning the plan the Executive Director should examine the possibility of changing to another pricing unit, for instance, number of students. Providing registration is high, this may work.

If 141 days must be charged and average registration per day is approximately 30 students, then the total number of students is 4,230 (141 X 30). To generate $200,000 in operating revenue, each student would have to be charged $47.28 per class day. Will the user group pay $50.00 per student per day?

Very often user's find it more acceptable to be quoted on output-based price (i.e. a price meaningful to a client such as student fees as opposed to classroom days or person days). Users can then more easily evaluate the benefits of the program in relation to their costs.

Now look at the Counselling program. Assume that there are two full time cousellors on staff and that each has the following number of days available for *"charging."*

Days per year	365
less: Weekends & Holidays	130
equals: Available Days	235
less: Non-chargeable days	15
equals: Chargeable Days	220

With two counsellors and an ability to schedule two counselling sessions per day, 880 counselling sessions (2 counsellors X 220 days X 2 sessions per day) can be charged.

Reference to the incomplete Budgeted Revenue and Expense Statement reveals that $19,100 of program direct expense and $97,850 of overhead expense must be covered by revenue in order to break even on the program.

To generate the required 116,950 of revenue, a charge of approximately $133.00 ($116,950 divided by 880 sessions) per session would be necessary.

The Executive Director may consider this unfeasible and determined that a charge of less than $90.00 per session would be the limit. So a charge of $87.87 per session is selected yielding a total revenue of $77,325 ($87.87 X 880 sessions).

There is a resulting deficit of $39,624 and the Executive Director now knows that the Counselling program is being subsidized from the general grant of $100,000.

Finally, examine the Media program. To break even, program direct expenses of $165,676 and overhead expenses of $74,650 must be covered. Assume in this instance that the users of the Media program will not be charged and that a funding institution has agreed to fund the program.

How much funding should the institution request?

As a start the Executive Director may consider $240,326 since this enables the program to

break even. At this level, however, the funding institution would be making a contribution to overhead which amounts to 31% ($74,650 divided by $240,326) of the total request. This will not likely be acceptable.

Finally he decides to request $204,000. The overhead contribution in this case is less than 20% of the total amount requested. This is presumably within the acceptable range for the funding institution.

By examining past performance and based on the immediate plans for the budget year, we have now seen how the Executive Director has been able to complete the Budgeted Revenue and Expenses Statement.

From the above the Executive Director determines that the *"Contribution"* from each program area is $97,800, $58,226.00 and $38,324.00 for Education, Counselling and Media respectively. Interestingly, when allocated overhead expenses are subtracted from contribution, the Executive Director can now see for the first time that some programs are heavily subsidized from the general grant of 100,000.

Presuming that the user prices are feasible and that the funds will be paid accordingly, the budget is deemed feasible.

Fig. 15

BUDGETED REVENUE AND EXPENSES STATEMENT

	EDUCATION	COUNSEL	MEDIA	GRANTS	TOTAL
REVENUE	$200,000	$77,326	$204,000	$100,000	$581,326
LESS: PROG. DIR. EXP.	102,200	19,100	165,676	—	286,976
EQUALS: CONTRIBUTION	97,800	58,226	38,324	100,000	294,350
LESS: OVERHEAD EXP.	91,850	97,850	74,650	—	264,350
EQUALS: SURPLUS	$5,950	($39,624)	($36,326)	$100,000	$30,000

Step 6 - Completing the Budget

Adding the Final Touches

All financial variables for the budget have now been determined. The completed document follows:

Fig. 16

BUDGETED REVENUE AND EXPENSES STATEMENT

	EDUCATION	COUNSEL.	MEDIA	GRANTS	TOTAL
REVENUE	$200,000	$77,326	$204,000	$100,000	$581,326
LESS: PROG. DIR. EXP.	102,200	19,100	165,676	—	286,976
EQUALS: CONTRIBUTION	$97,800	$58,226	$38,324	$100,000	$294,350
LESS: AGENCY CORE EXPENSES					
Advertising					$ 2,100
Automobile					2,500
Delivery					1,800
Depreciation					1,200
Dues & Licenses					800
Insurance					1,500
Interest					1,200
Legal & Audit					2,800
Other					800
Property Tax					670
Repair & Maintenance					450
Rent					4,680
Salaries & Benefits					229,500
Supplies					1,500
Telephone					7,050
Travel					4,200
Utilities					1,600
TOTAL AGENCY CORE EXP.					$264,350
EQUALS: OPERATING SURPLUS/(DEFICIT)					$ 30,000

Board Approval

The board of directors is ultimately responsible for the financial well being of the institution. The Executive Director presents the budget to the board for approval after which it becomes an operational document for fundraising and authorizing expenditure.

Budgetary Control

The Executive Director should not view the approved budget as a rigid document. As time passes, events will take place that will necessitate reviews of the budget. Where the variations are significant, the board and the Director may see a need to revise the budget.

If, for instance, a funding institution which had indicated it would give a grant of $200,000 for a Media program now confirms approval of only $100,000, the program would have to be revised to reduce program direct expenses. Depending on the effect the revision has on the contribution, the surplus will be reduced accordingly. Assuming revision reveals a drop in contribution from 97,800 to $27,800, the operating surplus of $30,000 has now turned to a deficit of $40,000!

The board and Executive Director will have to make a decision now on how the deficit will be financed. If another donor cannot be found at short notice and previous savings are inadequate, the institution will have to institute austerity measures so as to reduce institution expenses in order to make up for the deficit.

IDRC Budget Development and Financial Administration

Budgeting

The budget is a tool for planning and monitoring project funds. It is the part of the project proposal that translates the programmed activities into quantitative and monetary terms. It can also be used to communicate plans, motivate project personnel to spend within the plan and evaluate the project's performance.

The Budget Team

If the budget is to be an effective project-management tool and not just a means of estimating funding requirements, it must be prepared carefully. It should reflect a commitment made through the concerted efforts of the participants involved.

In preparing a budget proposal, the participants should include members of the research team as well as financial specialists such as the chief financial officer and the purchasing officer.

Budget Preparation

IDRC recommends a seven step budgeting process.

1. Prepare the workplan. It will include the following: A clear statement of project objectives, a work breakdown and a sequenced list of activities.

2. Chart the time and schedule the activities. This involves preparing a network diagram, a critical path diagram or a Gantt chart.

3. Estimate costs of each activity as they are laid out on the sequenced work breakdown, the network diagram, or the critical path diagram.

4. Total the expenses that are to be incurred for each activity.
Group similar expenditure items and obtain group totals where practical to do so.

5. Prepare the proposed budget

6. Plan the timing for the release of Project Funds. This can be done right on the network

diagram. Mark the points at which grant money will be received and mark each individual disbursement. Cash flow can be planned in this fashion.

7. Prepare the Budget Notes

Project Finance and Administration

IDRC Financial Philosophy

IDRC believes that the primary function of a research organization is to conduct research and that the role of the administrative infrastructure is to support that research effort.

Too often, financial administration is regarded, and regards itself, as a policing agency whose objective is to monitor and control research activities by means of financial controls and restrictive regulations.

IDRC prefers to encourage a "team approach", in which the administrative infrastructure serves as a powerful management tool to assist research professionals working in cooperation with their administrative counterparts rather than against them. In this spirit, pertinent financial information is passed to project officers who work closely with IDRC treasury staff. This useful communication back and forth between the project and the Centre serves as a useful way of monitoring a project's progress.

IDRC staff need detailed financial reports from the project on a regular basis. This information permits them to respond rapidly and sympathetically when an amendment to the budget is requested. Thus, IDRC requires that its grant recipients provide more financial information and reports than most other funding agencies.

In line with this philosophy, one of the key words in IDRC's approach to project-budget administration is **flexibility**. The difficulties of maintaining an accurate budget for a long term project are fully understood. There are problems of foreign exchange, rising costs, delays in obtaining equipment and supplies, and shortages of personnel. IDRC's flexibility allows them, as much as possible, to take these factors into account in its administrative procedures.

Also, institutions differ in their accounting systems and reporting methods as well as in their general administrative practices. *As a donor agency, IDRC expects certain minimum standards but does not want to see the research projects suffer as a result of too stringent regulations.* The following guidelines should be interpreted in light of this philosophy.

Financial Guidelines for IDRC Projects

Basic Structure of Project Budgets

The budget of an IDRC-assisted project consists of two parts - the Recipient-Administered Portion (RAP) and the Centre- Administered Portion (CAP).

RAP refers to that part of the budget that is administered by the recipient. It includes such items as wages and salaries, research expenses, and capital equipment. For funds released by IDRC on the basis of the RAP, the recipient will have full authority to hire full-time or part-time project staff and purchase the necessary

field supplies and other materials and equipment specified in the budget.

CAP, on the other hand, covers those expenditures that are approved budget items but, because of their nature, are administered by IDRC.

Project Reports

Financial Report

The financial report should allow both the recipient and IDRC to appraise the project's financial situation. It should:

- Be presented in the same format (i.e., using the same budget items) as the budget portion of the Memorandum of Grant Conditions.
- Clearly state the period covered (e.g., from 1 January to 31 December 19__). If the opening and closing dates covered by the report differ from the dates described in the Memorandum, an explanation should be provided.
- Include expenditures for both cash payments and accrued expenses. The latter include expenses that have been incurred but not yet paid such as invoices for goods sent by suppliers and services rendered to the project. To avoid double accounting for accrued expenses after they have been paid, recipients must separate cash payments from accrued expenses.
- Report expenditures in the recipient's local currency, indicating the name of the currency. For institutions that keep and pay their accounts in US dollars, the US dollar is considered the local currency.
- Include a summary of funds received from IDRC, indicating both the amounts in Canadian dollars and the equivalent in local currency as well as the date each installment was received. This information confirms that the correct remittances have been received by the recipient and serves as the basis that IDRC uses for calculating the weighted average exchange rate for converting expenditures in local currency into Canadian dollars.
- Include estimated expenditures for the next payment period.
- Include a list of the equipment purchased.
- Include an analysis of variations between budgeted and actual expenses as well as explanatory notes for major variations (more than 10%) in any given time.
- Include other project income, if applicable.
- Have it signed by both the project leader and the recipient's finance officer.
- Provide an analysis of the cash position at closing date.

Processing the Financial Report.

Within IDRC, the report is analyzed by staff in the Office of the Treasurer who:

- Calculates a weighted average rate of exchange and then converts local currency into Canadian dollars.
- Compares actual expenses with the budget. The variance is analyzed in both the local currency and Canadian dollars.
- Reviews estimated expenses to see how they will affect the financial outlook of the next payment period.
- Reviews the file date of the project with particular attention to how the project is faring in terms of the expected completion date.
- Reviews the history and schedule of payments.
- Analyzes the project's cash position.

The results of the analysis, which may include observations, queries, and concerns about the project's financial results as well as recommendations for payment or nonpayment, are then

conveyed to the IDRC program division concerned. The program staff discuss the results with a representative from Treasurer's Office and a letter is sent to the recipient.

The speed with which funds can be released is determined by the recipient's submission and presentation of financial reports. In many cases, questions need to be asked and answered (an exchange that can take considerable time) before IDRC can complete an evaluation of the project's financial standing and authorize release of funds.

The Standard Project Accounting Kit *

IDRC has developed a set of recording and reporting forms for use on IDRC-assisted projects. They are introduced and discussed below.

Report Form

This form consists of a Monthly Financial Summary and the Financial Report. The instructions on how to fill out the form are given on the form itself. Although the alternative forms are basically the same, the report form has several alternative designs that may be used depending on the need of a particular project.

The forms differ only in the amount of space provided to allow for the difference in the volume of transactions and for the difference in the method of filing. The report form is most useful to small projects because of its conciseness.

Columnar Form

An alternative approach, the Columnar Form is also included. The Columnar Form consists of a cash record and a classification of expenses by columns.

The cash record contains a record of all cash receipts and cash payments. Columns are provided for the classification of expenditures. Each expenditure column may consist of a portion for budget balance. The financial report can be prepared by taking the total actual amount paid for each type of expenditure. Since the classification of expenditure follows the budget item titles, comparison between the actual and budgeted amounts is facilitated.

The supplementary records are separate summaries for voluminous transactions; information from which is necessary for financial control. These records may or may not be used depending on need.

The record of unpaid bills is needed to keep track of project payables and obligations. The record of advances and liquidation is needed to control and follow-up advances to personnel. The equipment record helps to summarize the types and costs of equipment owned by the project. The inventory record is necessary to keep track of valuable research supplies.

* *Financial and Administrative Problems as perceived by IDRC Assisted Research Projects in Asia A report of the DEVIAD Workshops held in Sinapore 8 - 10 July and 13 - 15 July 1981.*

Instructions

Reports on cash position (Sections A, B, C, and D) should be completed at the end of each month. Sections E and F are used for recording the details of the transactions and should be filled in at the time of the transaction. For Section C, the Item's Budget Heading and Item Number (e.g. F-1, F-2, etc.) should correspond with those reported in Section F. Documents supporting the transactions should be grouped by budget headings and filed in the order that the budget heading appears in Section F. Extra copies of Section F are provided for use when there are more than three budget headings. Alternative forms (A and B) are also provided for Section F. These can be used when extra space is required for recording transactions.

Special Transactions

1. Some expenses may have to be paid out of an advanced amount. Expenses involving small amounts can be taken from a petty cash fund, which is considered as an advance payment to an assigned custodian. Advances that are issued and liquidated should be reported in section E. Upon liquidation, expenditures should be classified according to the items' budget heading and reported in Section F. But, they should not be transferred to Section C (Payments).

2. Payments of expenditures from funds from other donors need not be reported. If a payment is shared with another donor, only the amount chargeable to IDRC should be reported.

3. The Ending Cash Balance, which appears in Section D, should be reconciled with the amount of cash in the bank. Additions to, and deductions from, the cash account that are made by the bank (e.g. interest income, service charges) should be reported in Section B (Receipts) and Section C (Payments), respectively. The details of these entries should appear in the appropriate place in Section F. The process of reconciliation must consider outstanding checks (i. e. checks issued but not yet presented to the bank for payment).

Instructions

When to Prepare

This financial report should be sent to IDRC at the time specified in the Memorandum of Grant Conditions. The project coordinator, however, may find it useful for good financial management to complete this form more often (e.g. monthly).

How to Prepare

Column 1 - Enter the budget headings used in the budget portion of the Memorandum of Grant Conditions. These headings correspond to those found in Section F of the Monthly Financial Summary.

Column 2 - Enter the total expenditure for each budget item recorded in Section F. If the report is for twelve months, the amount that is entered should be the total expenditure on that budget item for the entire twelve-month period.

Column 3 - Convert into local currency the budgeted amount appearing in the Recipient-Administered Portion of the budget in the Memorandum of Grant Conditions. Enter this amount in Column 3 and indicate the year or period that is covered. The conversion rate that

is used should be the exchange rate used in the original budget proposal.

Column 4 - Enter the difference between Columns 2 and 3.

Column 5 - Enter your estimate of the additional expenditures to be made during the next period or until the completion of the project.

Accounting Kit - Columnar Form - Transactions should be entered in this columnar accounting kit in chronological order. Provide one column for each budget item or expenditure item. At the bottom of the jounal, there are four line totals, namely:

- Monthly total.
- Accumulated total.
- Annual budget.
- Budget balance.

Fill in these totals at the end of the month. The annual budget figure should be taken from the Memorandum of Grant Conditions and converted into local currency.

E - ADVANCES

E - 1 ADVANCES ISSUED

Date	Check No.	Name	Purpose	Amount
			Total →	

E - 2 ADVANCES LIQUIDATED

Item nos. should correspond with those at Section F

Date Liquidated	Date Issued	To - Purpose	Item No.	Amount		
				Advanced	Returned*	Used**

F. DETAILS OF EXPENDITURES

TRANSFER SUB-TOTAL FOR DIRECT EXPENSE TO SECTION C

F- Item's Budget Heading →

Date	Check No.	Details	Amount
A. DIRECT EXPENSE			
		TRANSFER THIS SUB-TOTAL TO SECTION C →	
B. LIQUIDATION OF ADVANCE (TRANSFERRED FROM E-2)			
		SUB-TOTAL →	
		ITEM TOTAL	

F- Item's Budget Heading →

Date	Check No.	Details	Amount
A. DIRECT EXPENSE			
		TRANSFER THIS SUB-TOTAL TO SECTION C →	
B. LIQUIDATION OF ADVANCE (TRANSFERRED FROM E-2)			
		SUB-TOTAL →	
		ITEM TOTAL	

F- Item's Budget Heading →

Date	Check No.	Details	Amount
A. DIRECT EXPENSE			
		TRANSFER THIS SUB-TOTAL TO SECTION C →	
B. LIQUIDATION OF ADVANCE (TRANSFERRED FROM E-2)			
		SUB-TOTAL →	
		ITEM TOTAL	

USE ADDITIONAL SHEETS WHEN NECESSARY

F. DETAILS OF EXPENDITURES

ONLY SUB-TOTAL FOR DIRECT EXPENSES SHOULD BE REPORTED IN SECTION C

F- Item's Budget Heading ▶

DIRECT EXPENSE (transfer to Section C) / LIQUIDATION OF ADVANCE (Transfer from Section E 2)

Date	Check No.	Details	Amount

F- Item's Budget Heading ▶

DIRECT EXPENSE (transfer to Section C) / LIQUIDATION OF ADVANCE (Transfer from Section E 2)

Date	Check No.	Details	Amount

F- Item's Budget Heading ▶

DIRECT EXPENSE (transfer to Section C) / LIQUIDATION OF ADVANCE (Transfer from Section E 2)

Date	Check No.	Details	Amount

F. DETAILS OF EXPENDITURES

F- Item's Budget Heading ▶

Date	Check No.	Details	Amount	
A. DIRECT EXPENSE				
		Transfer this sub-total to Section C ⟶		
B. LIQUIDATION OF ADVANCE Transferred from E-2				
		Sub-total ⟶		
		Item Total		

RECORDING & REPORTING KIT
COLUMNAR FORM

(In Local Currency) Page_____

Date	Description	Reference	Cash			Budget Items							
			Received	Paid	Balance	1.1	1.2	1.3	2.1	2.2	3	4	5
	Monthly Total Accumulated Total Annual Budget Budget Balance												

FINANCIAL REPORT

From : To : Period	Project Title	Centre File No. Currency

Item's Budget Heading (1)	Actual Expenditures (2)	Budget Year_____ (3)	Variance Favorable (Unfavorable) (4)	Estimates for the next period (5)

SECTION VII

Training

The Centre Library

The Centre Library has a collection of approximately 50,000 books and 4500 serial subscriptions. It is considered a working collection which means that material is purchased to support the on-going activities of IDRC. A major objective, therefore, is to support the information needs of IDRC staff as well as to meet the needs of projects which are funded by IDRC.

The Library has access to a vast amount of information including access to over 300 commercial databases. It endeavors to help project staff obtain specific project related information.

The libraries located in the Regional Offices have small collections of books and periodicals which provide general information related to the development field e.g. names and addresses and information related to the region and general statistical information. These offices are located in Bogota, Cairo, Dakar, Nairobi, New Delhi and Singapore.

Literature Searches

When a project commences, it is often useful to request an automated literature search to review previous research in the subject area. A list of references tailored to the specific information needs of the project can be generated. To obtain the most relevant results, the library staff will request the project manager to identify:

- The subject area in narrative form.
- The key words.
- The names of the major authors in the field.
- Parameters such as geographical region, language of citations, and time span.
- The number of references required.
- The date that the printout is needed.

Document Delivery

When the results of the literature search are available, project staff can then request the documents that they require.

The Library purchases books and serial subscriptions for project accounts. Project staff should obtain information about the publication and then obtain financial approval before making a request to the Library.

Journal articles can be retrieved from the Library's collection or obtained on an inter-library loan.

Current Awareness

The Library provides two types of current awareness services. The first is an automated selective dissemination of information (SDI) service using commercial data bases. This service provides a print-out on a regular basis and keeps project staff informed about current research in their area of interest.

The second current awareness service is designed to keep project staff informed about articles published in specific journals. To do this the library distributes copies of the tables of contents of the journals as they are received. Both services are available upon request.

Development Data Bases Services

The Centre Library provides access to eleven databases through its Development Data Bases Service. These databases are listed below:

- ACRONYM: Acronyms relating to international development.
- BIBLIOL: The collection in the IDRC Library.
- DEVSIS: Development literature published in Canada.
- SALUS: Low-cost rural health care.
- IDRIS: Inter-Agency Development Research Information System (197) IDRC projects, International Foundation for Science (IFS), Swedish Agency for Research Cooperation with Developing Countries (SAREC), Board on Science and Technology for International Development (BOSTID), German Appropriate Technology Exchange (GATE), United Nations University (UNU), and Japan International Cooperation Agency (JICA).
- FAO: Documentation database of the Food and Agriculture Organization of the United Nations.
- ILO: LABORDOC database of the International Labour Organization.
- ERG: Energy topics in the Third World
- UNESCO: Database of the United Nations Educational, Scientific and Cultural Organization.
- UNIDO: Industrial Development Abstracts database of the United Nations Industrial Development Organization.
- AID: Document database of the United States Agency for International Development (USAID).

IDRC provides this service free of charge. The cost of telecommunications, however, is the user's responsibility.

Assisting Library Staff

The Archival Collection

The Library's Archival collection contains reports and other documents produced by IDRC projects. When these items arrive in Ottawa from the project sites, copies are sent to the program officers and, in the IS Division, to the Library. All this material is indexed and microfilmed so that microfiche copies are available upon request. Project officers can help the Library to keep the archives current and relevant by sending project outputs into their Program Officer on a regular basis. This material then becomes accessible to researchers around the world.

Project Completion

The Library's goal is to support projects that are funded by IDRC by providing in-depth information tailored to the specific needs of the project. However, both the Centre Library and

the Regional Libraries will give limited service to those projects whose funding agreement with IDRC has expired. This limited service includes providing photocopies or microfiche copies of documents and conducting searches on IDRC's databases.

Training in Information Science Projects

An objective of the International Development Research Centre (IDRC) is *"to assist developing countries to build and maintain indigenous research and research supporting capacity."*

This assistance is to be carried out *"mainly at the national but also at the regional level and mainly in terms of human resources"*.

This objective stems from the belief that every society is *"capable of enhancing its human resources by providing them with the basic skills for taking responsibility for their own well being, and for making a self-fulfilling contribution to the greater community."*

Thus, although IDRC is not a training institution, training and staff development are a central part of the programs and projects supported by the Centre.

The Fellowships and Award Division (FAD) has responsibility for administering training programs which cut across all the Divisions of the Centre. FAD's programme is described below.

The Information Sciences Division (ISD) carries out this mandate by designing projects that build indigenous capacities within developing countries for the effective management and application of information for development.

Training Needs in Information Sciences

The field of Information Sciences is a dynamic one. Advancing technology provides tools which allow for great degrees of specialization and refinement in information services. In addition, the creation of new disciplines and the increase in knowledge produce new types of users and information needs. Moreover, activities in information sciences are no longer carried out only by persons whose primary area of specialization is information/documentation. Subject specialists have now entered the field and STI project managers come from a variety of technical backgrounds including for example engineering, agriculture and economics.

Training in information sciences is thus characterized by the need for continuing education. In some cases it is necessary to ensure that project staff have the opportunity to acquire basic information skills to supplement technical/scientific qualifications. In other cases, it is necessary to

give project staff the opportunity to learn new technologies or techniques to keep pace with the continual changes in the field. These changes occur regularly in areas such as the design of specialized information services, automation of library functions, database construction, international database searches and thesaurus development.

There is also a need to look at new ways of providing information services because of the changes resulting from some of the following advances:

- Increased amount of knowledge and number of specialized disciplines.
- Emergence of new groups of users who require more and more specialized information.
- Development of systems which use facilities such as networks, automation, telecommunication and other rapid means of information reproduction and dissemination.

Types of Training Available

Advanced Training

Along with the urgent need for training is the recognition that the required specialized training is not usually available in developing countries. This means that training in the Information Sciences has had to be acquired at colleges and universities in developed countries.

This situation is not satisfactory. The ISD recognizes that information, technological and skill transfer should be appropriate and based on needs. Thus whenever possible ISD promotes South-South transfer programs and seeks to find training opportunities within developing countries. In this connection one ISD program, carried out under the Socio-Economic Information Program, is concerned with information science education in developing countries. The program concentrates on building regional capabilities for continuing and higher education in the information fields. This program of institutional capacity building is carried out in close collaboration with the Fellowships and Awards Division.

Activities have included providing on-going assistance for the development of postgraduate programs at the University of Ibadan, Nigeria, and the Universidad Simon Bolivar in Venezuela and providing support for the development of seminars dealing with curriculum review in China, Thailand and Jamaica.

The Division's Information Tools and Methods program has just completed the development of a project designed to link Ecole de bibliothécaires archivistes et documentalistes (EBAD) of the Université Chiekh Anta Diop, Dakar, Senegal and the Ecole des sciences de l'information (ESD), in Rabat with the Ecole de bibliothéconomie et des sciences de l'information (EBSI) of the Université de Montréal. The project will develop and evaluate teaching tools in informatics related to documentation and will also help standardize teaching programs in Documentation Science. This program is expected to have a major impact in French Speaking Africa since the schools in Dakar and Rabat serve that whole region.

Continuing Education and Short Term Training

In the Information Sciences Division a small number of projects have been designed exclusively to meet training needs.

The training offered by these projects includes:

- Management of information systems.
- The use of modern technology.
- Computer communication.
- Documentation and information standards.
- Development of micro-computer based instructional resources.
- Preservation of archives.
- Micrographics.
- Documentation techniques.
- Industrial information.
- Development of training materials.

These projects were carried out in Kenya, Mali, Tanzania, Senegal, Hong Kong, Philippines, Haiti and Venezuela. In some cases funding was shared by IDRC, FAD and UNESCO.

Training Support

Requests for long-term training may be referred to FAD for consideration. However, with regard to short term training, the Information Sciences Division funds training in activities that relate to the projects it supports. There are several reasons for this policy.

First, it helps to ensure that the project is able to achieve its objectives.

Second, it ensures that the training provided responds to the specific need of the agency/institution.

Third, it ensures that the right people are trained to do the job and that the experience and knowledge gained in the training program is immediately applied.

Fourth, it ensures the efficient use of training funds.

Finally, training directed to job related tasks leads to a maximum return on the resources invested in the project as well as increased satisfaction for the participants.

Within the Information Sciences Division efforts are made to match training needs with existing training programs where this is possible.

Short-term Training

Over the last 10 years, the following training initiatives have been supported within STI projects:.

- General management of information-centres/services. This is usually organized on an in-service basis within a well-run documentation centre or information service.
- Short courses on information management, including standard formats and methodologies. These are usually aimed at personnel working within an information centre and are organized both through in-service training or course attendance. For example courses are run by FAO on AGRIS methodologies and by (ACCT) Agence de Cooperation Culturelle et Technique in France on basic information management.
- Training on the use of computer technologies.
- Training in the operation and maintenance of project-related equipment such as computers, micrographics, photocopiers and photo-offset equipment.
- Participation in international information conferences/workshops relevant to the objectives or subject area of a particular project.
- Communication skills. Examples include: training in the production of project outputs such as technical writing and newsletter production.

- Study tours or visits to institutions that are leading the field in areas that impact a particular project.
- Production of audio-visual materials.

Choice of Participants

Training needs are usually identified in the project proposal and are linked to the project activities.

It is important that the right people be chosen to participate in training events. Criteria to be considered include the prior experience and knowledge of the candidate and the interest they have in the subject area.

Another concept that should be given strong consideration is "*training for trainers.*" People who are required to transfer their knowledge to others should have the opportunity to learn how to do this effectively. This idea is strongly encouraged by the Division.

Role of Project Managers in Staff Training

At the beginning of the project it is expected that project managers will arrange for in-house training in order to orient their staff to the project activities and objectives. They should also be prepared to engage in training and development activities to assure that their staff have the skills required to complete the project activities. The role of the project manager is to develop their employees from a Developmental Level 1 to a Developmental Level 4.

This kind of "*developmental training*" could include some of the following activities.

- Regular meetings to discuss project development.
- Identification of further training.
- Training of new employees.
- Identification of local training initiatives which could improve the skills of the project team.

Conclusion

Project managers say that their most urgent problem is locating and attracting people with the skills to do the work. The project manager must therefore plan a very careful recruitment policy and follow-up with a well designed training and development program.

Whenever possible, on-the-job training should be given priority. Next best is training at local institutions or failing that national and then regional institutions.

Bilateral training courses organized/funded by international agencies or multilateral organizations are sometimes available. IDRC regional staff are usually aware of these opportunities which should only be considered when the training resources are not available locally.

Project management training for the Information Sciences Division program officers, however, often advise and counsel project staff about management issues during project negotiation and project planning. As well, during project monitoring every effort is made to solve problems and to adjust the project according to changing circumstances and difficulties inherent in the local situation.

Training in Project Management

The recent discoveries, developments and diffusion of information technologies in developed countries has ushered in an unprecedented proliferation and infusion of computer based technologies in developing countries. This has happened with such speed that some institutions are literally bombarded by what Schware and Trembour (1985) called the *"barefoot microchip"*.

These technologies are received by the developing world out of a belief that they will accelerate the development process. However, developing countries do not have the economic and human resource infrastructure and organizational culture to absorb and these technologies. In fact, as ILO (1985) observes, most institutions in developing countries suffer from the problems of inadequate integration of human resources concerns in the mainstream of overall institutional and national development plans.

For the most part, donor agencies have fallen into the same technology trap. In their zeal to market new technology, they have often dumped them in institutions without appraising the human resource base or the operating environment. Morss (1984) observes that the proliferation of development projects with their associated technologies has had destructive effects in some countries. In some of these countries, Morss observes, *"instead of working* to *establish comprehensive and consistent national and institutional development objectives and policies, government officials are forced to please donors by approving projects that mirror the development enthusiasm of each donor"* (p. 465).

Project leaders have the responsibility and moral obligation to protect their institutions from the proliferation of technologies without appraisal of the human resource base. Following that there must be thorough training to facilitate the introduction of the new technologies.

The human resource issue in developing countries is so crucial that the Canadian Government, after years of experience and reflection, came to the conclusion that *"thinking human resources development in everything we do should become a trademark of Canadian aid"* (Winegard Report, cited in CIDA, 1987 p.37).

Echoing the famous contention of the South Commission Chairman, J. K. Nyerere that *"Development is about people"*, the CIDA report: Sharing our Future, makes human resources development activities the central theme of all development aid. In its own words: *"people are in fact not only the most crucial resource but the raison d'etre of development, both the means and end. The development of human resources must be the first priority, because the developing countries need large number of competent, well trained, and educated people to carry their societies forward to reach their goals ... and because people must come first if the development process is to make sense. Human resources development (HRD) is the key that can unclock potential talent and abilities, opening the way to social and economic progress."* (CIDA p. 36)

This is the context within which the Fellowships and Awards Division (FAD) functions. The division views training in broad terms recognizing that it involves the development of individuals, groups, and institutional capacities for sustainable growth, generation of technology and the implementation of development activities.

It is becoming increasingly clear that training in the information sector, especially at graduate level, is not just a matter of acquiring skills on how to operate new technologies. Rather, it involves the broader issue of managing technology for development. This calls for an understanding of the development issues surrounding the introduction of new technology. This is particularly critical in the information sciences as the technologies are characteristically embedded within the work environment and culture. As one Egyptian health administrator noted: *"If you bring in a tractor or a drilling rig, all you need to do is to train people to run that particular machine and maintain it. But successfully adapting the microcomputer has nothing to do with simply teaching people how to run the machines. First you have to successfully run your office or laboratory or department before the computer can be of any help at all"* (Cited in Schware and Trembour p. 16).

This is why students who study in developed countries very often lack the developmental context for technology transfer and applications in developing countries. Often, the assumptions made about the workplace in developing countries are not correct. In Marghalani's (1987) words, *"To establish modern technology in a developing country, we need to change social systems and human skills and the physical implements in which technology is embedded* (p. 357).

Marghalani enumerates the following factors to be taken into account:

- Lack of available trained manpower.
- Low profile associated with jobs in the information science.
- Lack of study and promotional avenues and opportunities - hence *"dead end jobs"*.
- Lack of experienced personnel.
- Limited associated technologies or infrastructure ie.telephone lines.
- Locational isolation of individuals, ie. Computer room/library.
- Language barriers (both technical and regular mediums).
- Fear of technology among incumbents and the old guards.
- Misplaced expectations of technology as panacea of all ills.
- Technological illiteracy of users.
- Unstable leadership ie. when one director leaves, the initiative may die as well

- Security and secrecy of information
- Lack of standardization
- Lack of institutional information technology policies.

These are the real issues. There is a lot of evidence to suggest that in many developing countries technological gadgets have been installed but are then underutilized due to poor training and implementation plans. Beyond the technical objectives of training such as enhanced user satisfaction, cost effectiveness, integration of vertical and horizontal functions, and the simplification of operations, project managers have to consider issues of a cultural, organizational, political, and contextual nature if technology is to be an effective tool for accelerated economic transformation.

The 1987 Nobel Prize Winner in Economic Science, Professor Robert Solow may have been right to say that it was *"technology and not capital"* which was key factor in economic growth and development but he was not oblivious of these broad issues (Daily Nation , 21.11.88 : Experts to look at science as a development agent p.13).

IDRC Training Policies and Mechanisms

Project leaders have two avenues open to them for accessing training funds: via projects in the division or via FAD annual allocations.

1. Via Projects in the Division

One route is through the project itself - during the project development stage. After a careful analysis of the human resources issues related to the project objectives, project leaders may include in the budget training funds sourced from the Research Division or from FAD or from both. Characteristically this training is done through short term induction courses, workshops, conferences, and seminars. Occasionally it includes masters level courses.

The advantage of accessing training funds in the project proposal include:

- The project leader has control of the funds once they are in the budget.
- Ensures integration of training into project objectives.

Disadvantages include:

- Requires negotiation for any change to be made.
- Takes away funds from project activities.
- May delay completion of project if the training extends over a long period.

2. Via FAD Annual Allocations

The second way to access project funds is through the Fellowships and Awards Division which has annually appropriated training budgets.

The advantage of this route is that it is flexible and responsive throughout the life of the project. However, since there are no divisional allocations, the competition for these funds is very stiff.

Training Objectives

1. Project Support Training

This training is designed to upgrade the skills of staff members working in those institutions that have been chosen to host a new project.

It takes the form of on-the-job training, apprenticeship programs, temporary assignments, short-term diplomas, and masters degrees taking less than two years.

2. Program Support Training

The project mode of funding training activities is not ideal since it can often be disintegrative, time-consuming, labour intensive, and short term (Morss, 1984). Thus many institutions prefer the program mode of funding. It is broader and longer term.

As new research and development programs are put into place, training needs naturally arise. For instance, a country may establish a new program in the field of Agriculture and Nutrition Information Systems which requires training integrated over the short and long term.

3. Institutional Support Training

Many donor agencies are now convinced that successful research and development projects require planning much beyond the narrow interests of the individual project. Thus, training is often given to non-project personnel who perform support functions essential to the effective operation of the institution. These include administrators, accounts clerks, secretariat, managers, technicians, and communications people.

Alongside this training, consideration is given to other infrastructure supports such as microcomputers, transport, laboratory equipment and raw materials not locally available. In other words, trained people should have access to the facilities, resources, and equipment they require to put their skills to work.

Support Mechanisms

To achieve the three objective listed above, FAD has three mechanisms of support.

1. Individual Awards

These are given to individuals who show the potential to make a significant contribution to the research or growth and development of the home institution. This could include: attending short courses mounted by others, the opportunity to study toward a technical diploma or masters and PhD degree.

Because of limited resources, selection is done carefully and strategically according to the following criteria:

- Activity in research and information management.
- Leadership in a research and/or information project (multiplier effect). This refers to applicants who have potential to master more than one skill and who are flexible, eager to learn, and good at working with others. These people are referred to in the current corporate literature and those who "*believe in constant incremental strategic improvement in the operation.*" This viewpoint is favored over those who, upon achieving a goal or objective, sit down and celebrate - No prescribed plateauing or "*Kaizen*" (Feuer and Lee, p. 24).
- Affiliation with an institution or unit which has a research mandate.
- Involved in an IDRC supported project or priority program area.
- Recommended by the employer and/or project leader.
- Endorsed by from FAD and the other appropriate program division.

- Received admittance to an appropriate institution in the region, Canada, or elsewhere (in that order of priority).
- Meet age requirements: PhD - 35, Masters - 45.

2. Group Training Courses

These sessions are popular and productive because they are flexible and can be organized as a response to specific needs. The objectives of group training include:

a. Project Development Thrusts. Participants come to a course with preliminary ideas and use the structured setting to develop their proposals with help from consultants and/or IDRC program staff. In the process, they learn new procedures, standards, techniques and research methodologies.

b. Skills Update and Development. Many senior researchers and managers have never had the opportunity to acquire skills in the areas of management, statistics, computer programming and operation etc. Short tailor-made courses can easily be designed to fill in some of these gaps e.g. current courses offered in microcomputer application.

c. Creation and Stimulation of the Research Climate.

Short courses can often be used to raise the stature of new or neglected research areas or methodologies and stimulate the submission of research and development proposals. Some of these areas include: biotechnologies and related information systems, remote sensing and imagery data, rootcrops and marine resources.

The criteria used for development and funding of such courses include:

- Validation of training needs by FAD and the relevant research division(s).
- Relationship with IDRC priority program areas and affiliated institutions.
- Institutional capacity to mount the courses within the regions.
- Multidisciplinary or generic nature of skills.

IDRC has supported over 20 group training courses in Africa. Some such as those involved with microcomputer applications and statistical methods in health, social sciences, and agriculture; general management and computer technologies are recurrent.

3. Complementary Human Resources Development Activities

There are a variety of activities designed to improve the skills and knowledge of project personnel. These activities include:

a. Strengthening graduate studies in the region through the IDRC supported network of Deans of Graduate Studies (brochure available) and the establishment of the School of Information Sciences for Africa based in Addis Ababa University (program content appended).

b. Training needs assessment missions and meetings (ie. one in agriculture and another one in publishing and communications).

c. Evaluation of training programs in developing countries and Canada.

d. Manpower studies in relevant program areas.

e. Development and production of research training manuals.

f. Research management training seminars.

g. Tracer studies to locate and evaluate the utilization and preoccupations of previous awardees.

Application Procedures

The awards are usually identified during project negotiations and recommended to IDRC by recipient institutions.

Many individuals apply directly and, if found to be in programs and institutions where IDRC has an interest, their applications are circulated for appraisal and comments.

Once acceptance in principle has been obtained, a detailed application form is completed with an attached Curriculum Vitae, transcripts and institutional affiliation and is placed in the pipelines for funding.

There are no deadlines for application but selection and placement may take as long as a year. Some of the recurring problems experienced in making placements include:

- Assuring placement in appropriate institutions.
- The rising cost of tuition fees for foreign students.
- Extended duration of training.
- Demands to fund spouses and children.

Fig. 1 Additional Information about Training

References

C.I.D.A., *Sharing Our Future*, Hull-Ottawa, C.I.D.A. 1987

Feuer D. and Lee C., *How Companies Pick Tomorrows Winners, Training,* May 1988, pp 23-34.

ILO, Manpower Planning in National Development:

The Evolution, Orientation, and Activities of an ILO Program. ILO Seminar Paper to Regional Seminar on Human Resources Development in Eastern, Central and Southern Africa, Nairobi, March 1985.

Marghalani, M.A., Factors Affecting Information Technology Transfer in Developing countries. *ASLIB Proceedings* no. 39, 11/12, 1987, pp. 355-359.

Morss, E.R., Institutional Destruction Resulting From Donor and Project Proliferation in Sub-Saharan African Countries. *World Development* vol. 12, No. 4, pp. 465 - 470.

Schware, R. and Trembour, Rethinking Microcomputer Technology Transfer to Third World countries. *Science and Public Policy,* February 1985, pp. 15-21.